



Armed Forces College of Medicine AFCM



Back & Scapular region

Dr. Mervat Thabet
Prof. of Anatomy and Embryology

INTENDED LEARNING OBJECTIVES (ILO)

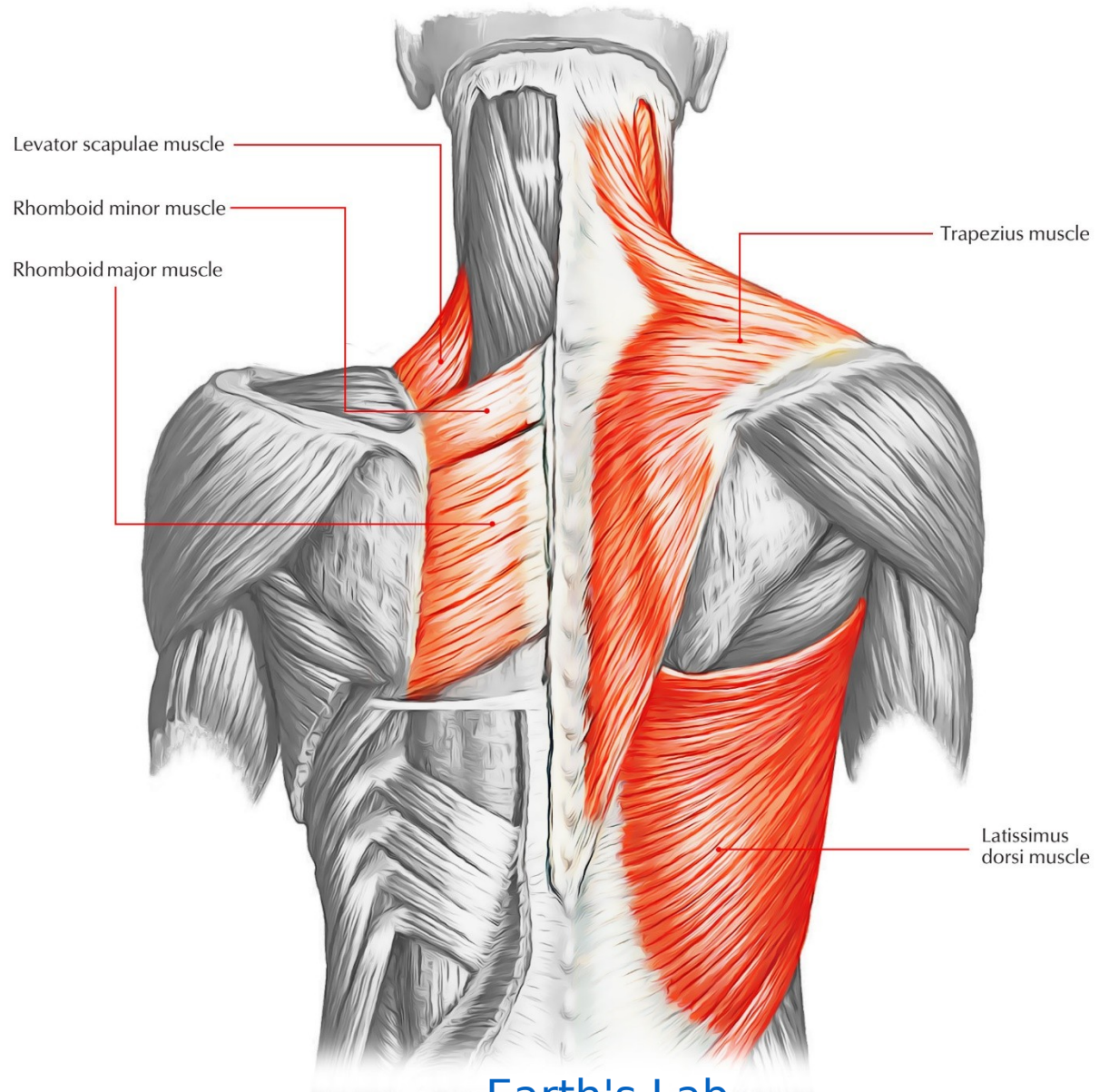


1. Describe attachment, action and nerve supply of muscles of back; latissimus dorsi, trapezius, levator scapulae and rhomboids
2. Describe attachment, action and nerve supply of scapular muscles; deltoid, supraspinatus, infraspinatus , subscapularis , teres minor and teres major
3. Identify the rotator cuff muscles and their clinical significance
4. Describe boundaries and contents of intermuscular spaces in scapular region
5. Describe root value, course, main relations and branches of axillary and suprascapular nerves

Muscles of the back

❖ The muscles that are connecting the upper limb to the vertebral column .

❖ They are arranged into two layers:
superficial & deep .

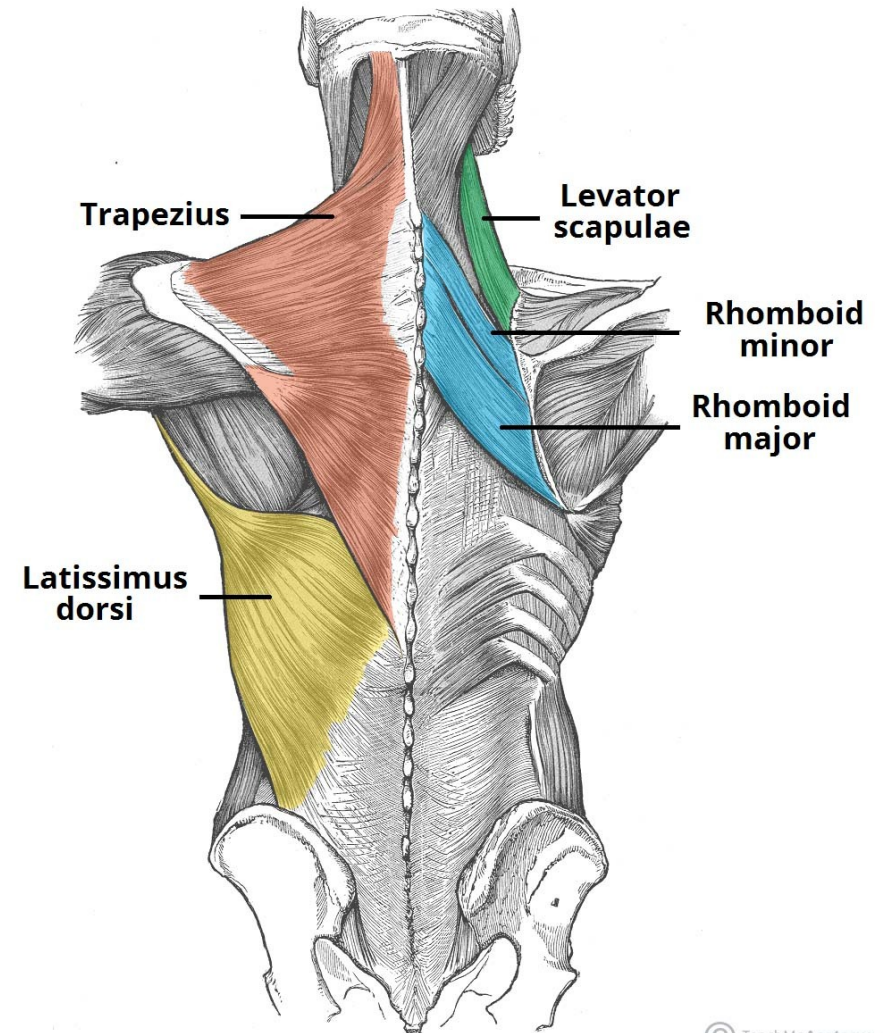


[Earth's Lab](#)

Superficial layer

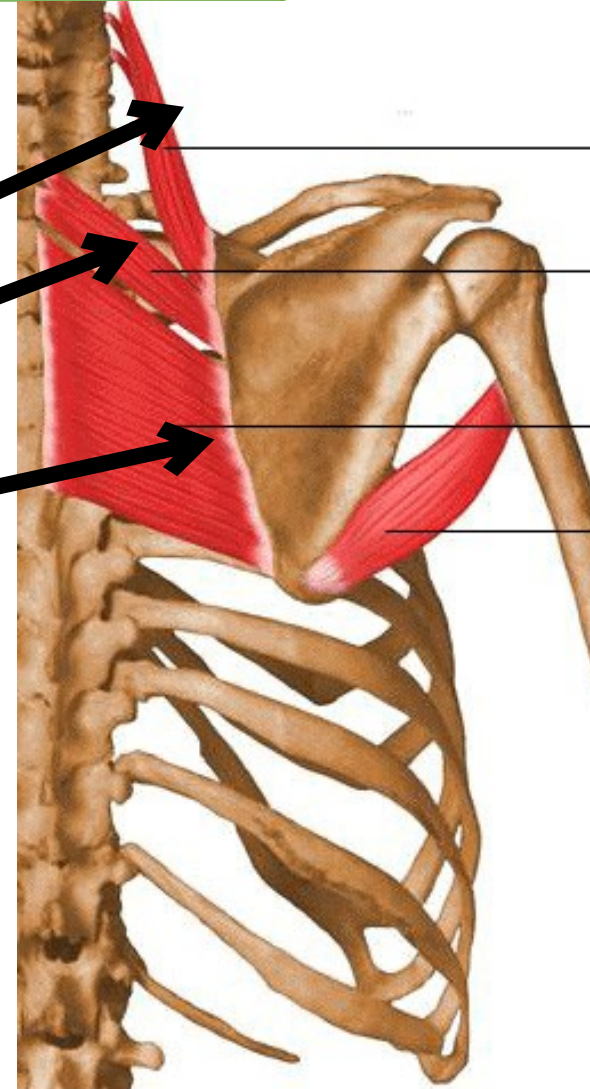
Trapezius

Latissimus dorsi



Deep layer

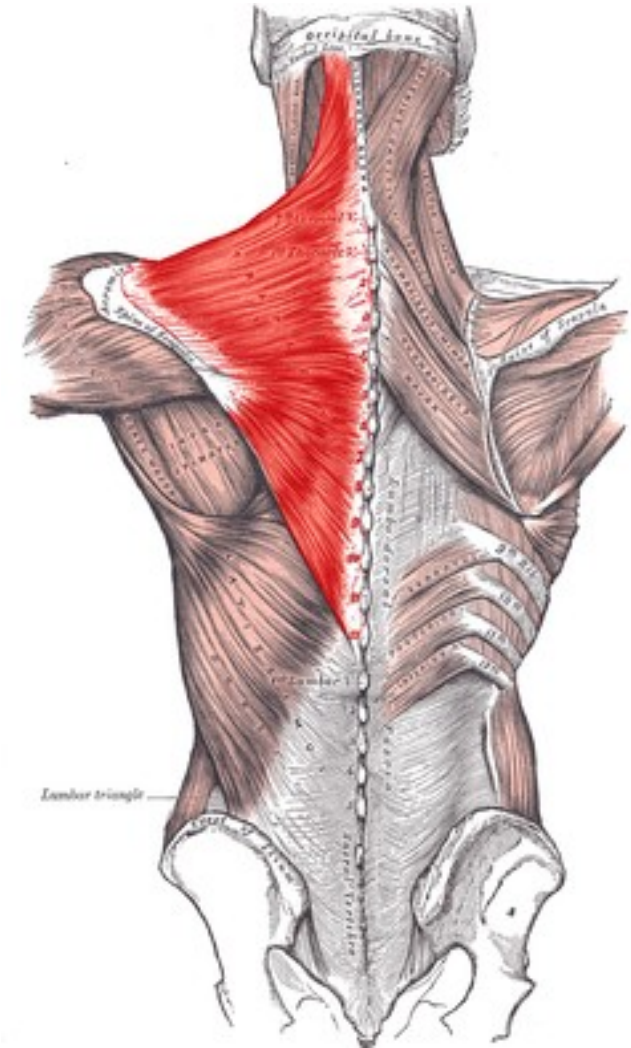
**Levator
scapulae
Rhomboides
minor
Rhomboides
major**



Trapezius



Frank H. Netter 4th. edition



fitbody.center

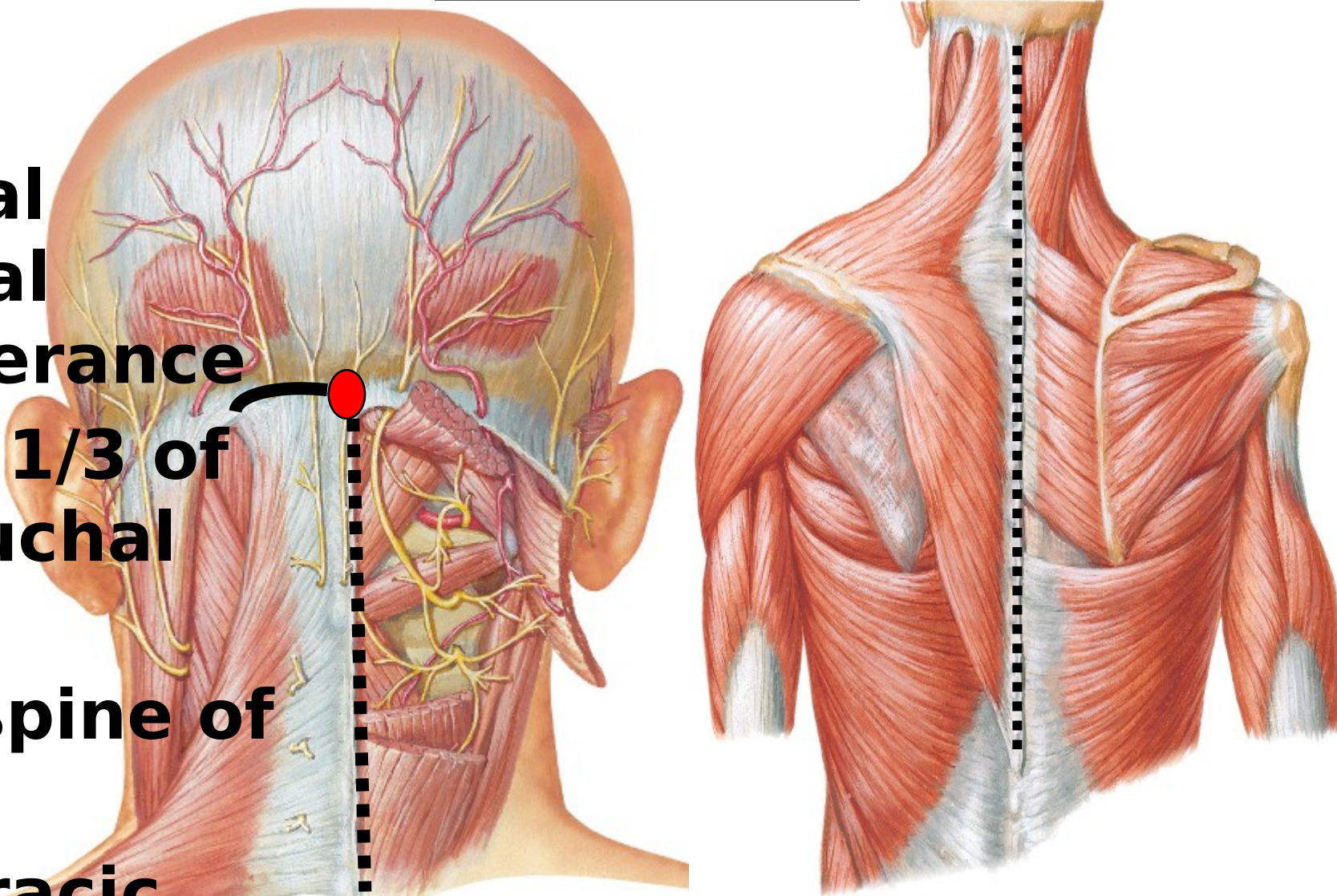
Origin

1. Skull:

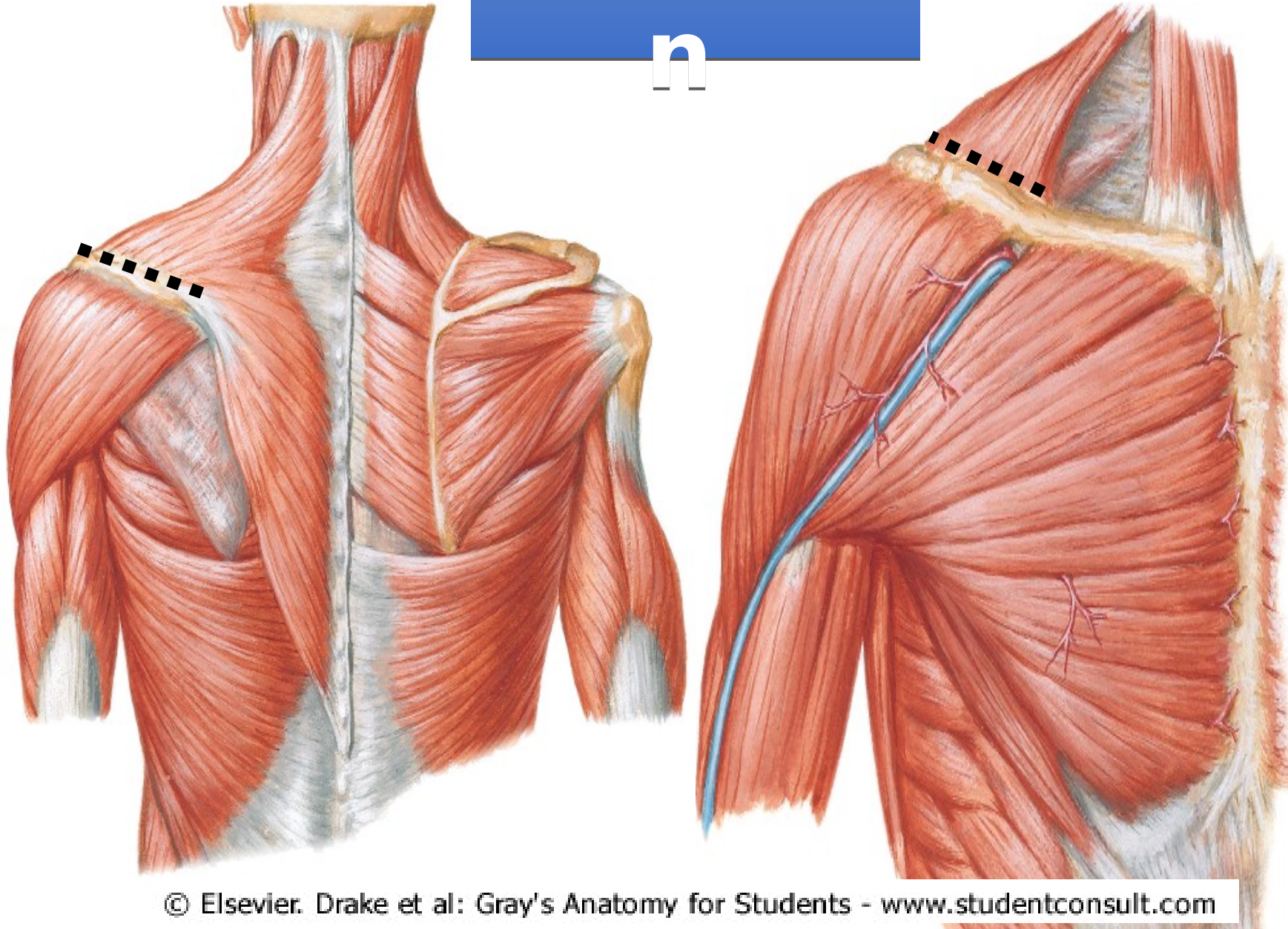
- **External occipital protuberance**
- **medial 1/3 of sup. Nuchal line.**

2. Neck: spine of C7.

3. All thoracic spines (T1-



Insertion



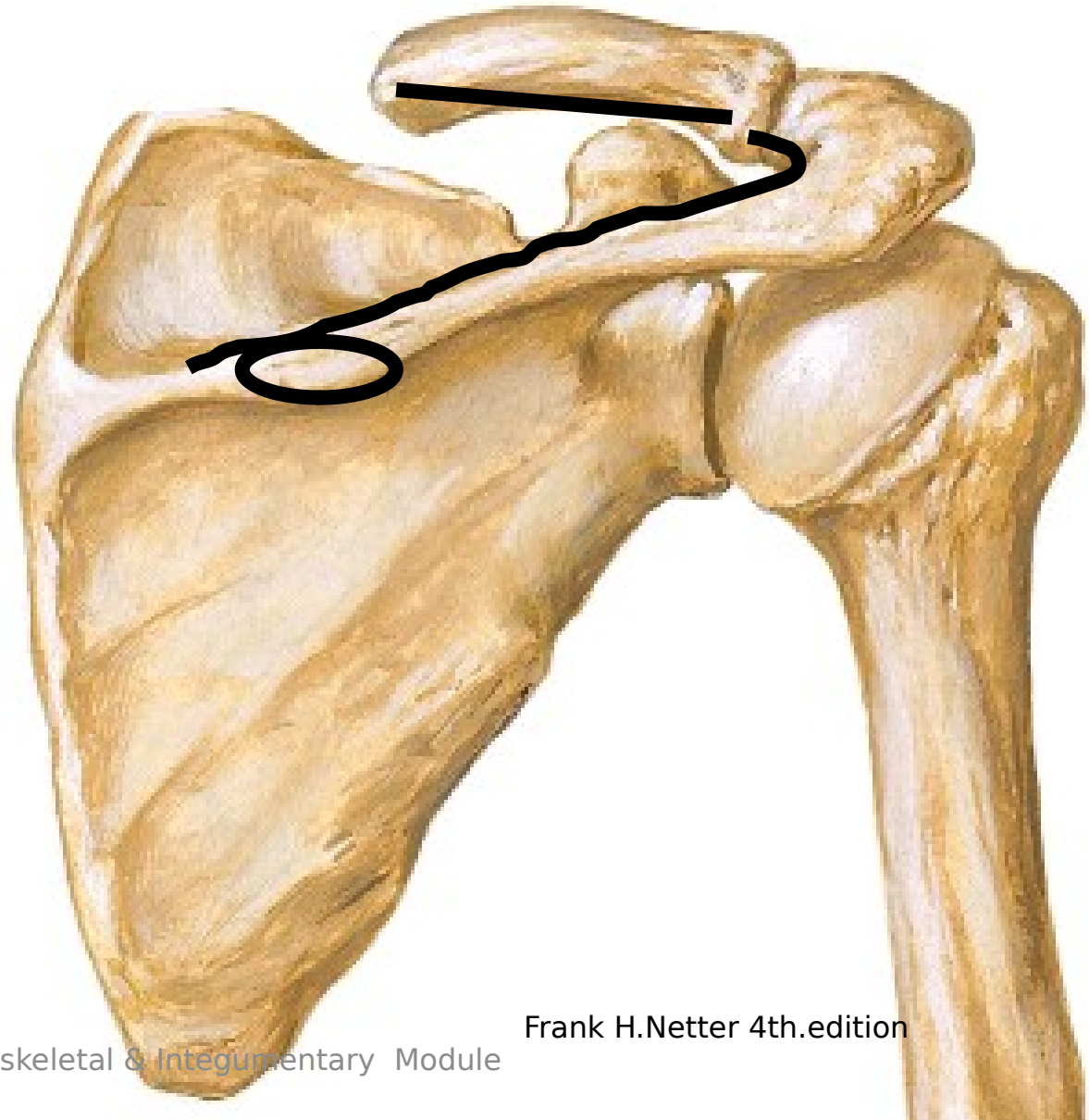
© Elsevier. Drake et al: Gray's Anatomy for Students - www.studentconsult.com

Insertio n

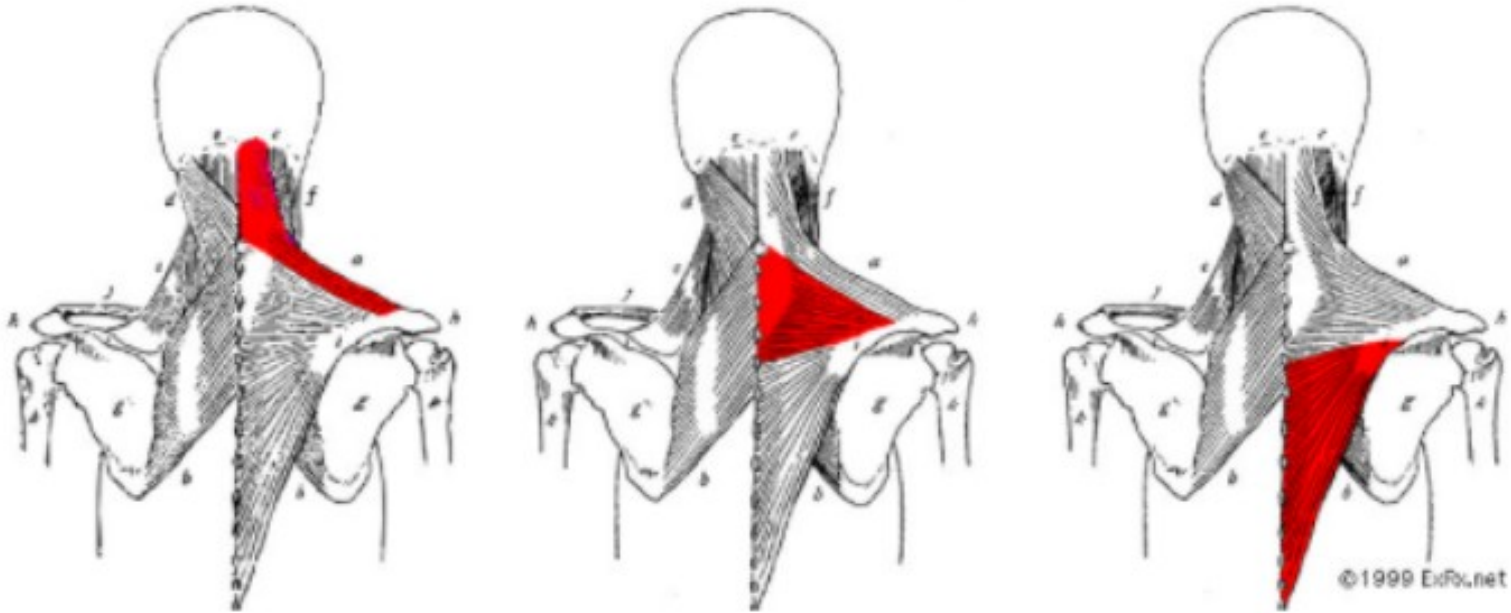
1. Upper fibers:
lateral third
of clavicle

**2. Middle
fibers:** medial
border of
acromion
& upper lip of
spine of
scapula.

3. Lower fibers:
tubercle at
medial end of



Trapezius (Upper, Middle, Lower)



[Mobility on Demand](#)

Upper fibers: **elevate** the scapula.
Lower fibers: **depress** the scapula

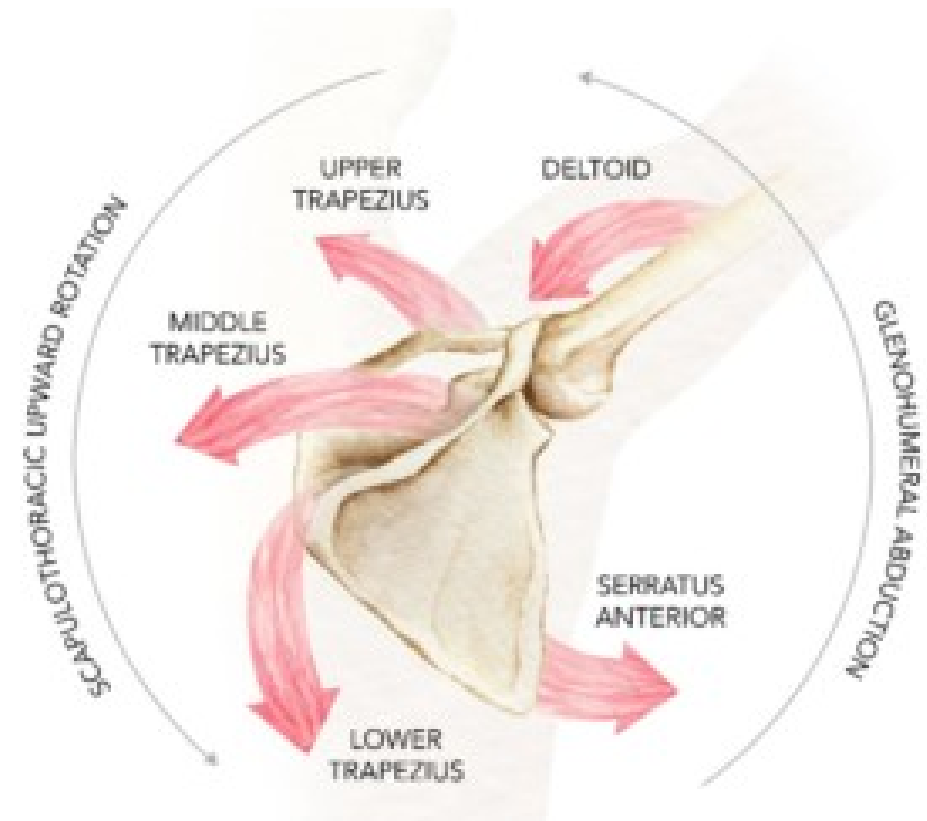
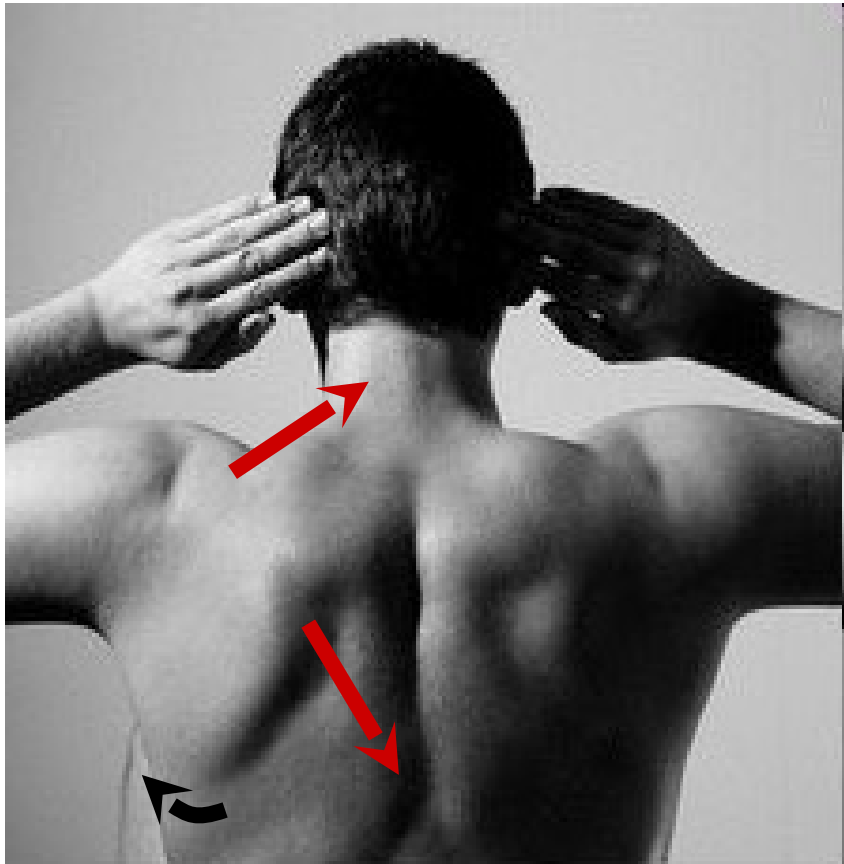


Middle fibers: **retract** the scapula.



Upper & Lower fibers:

Rotary movement of the scapula; moving inferior angle of scapula laterally and upward when raising the limb above head.



[Sports Injury Bulletin](#)

RETRACTION



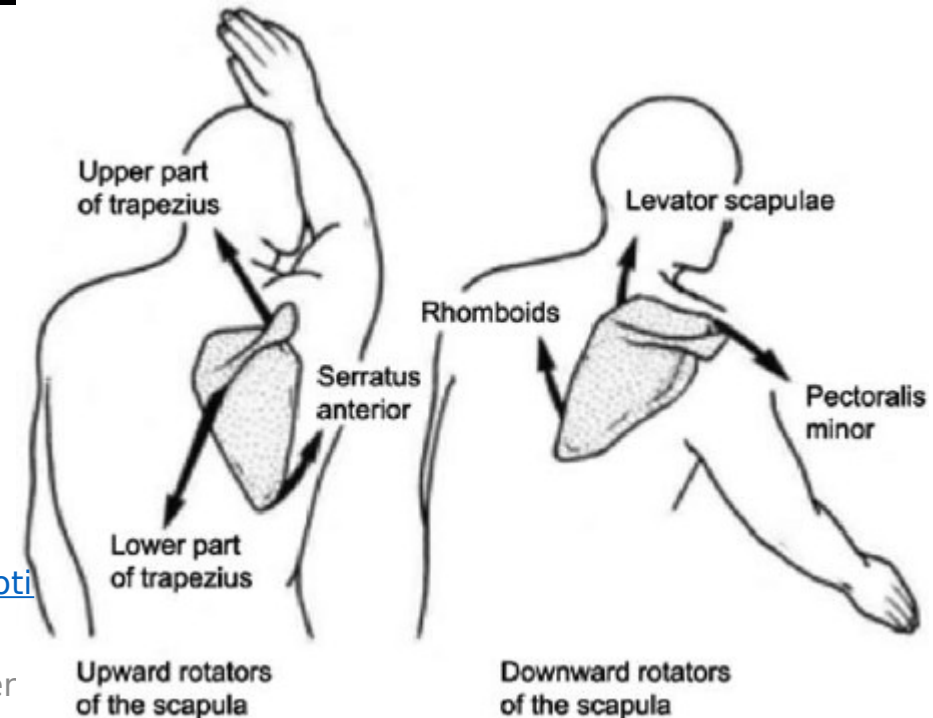
[imbMedical Gross Anatomy](http://imbMedical.com)



ROTATION OF SCAPULA

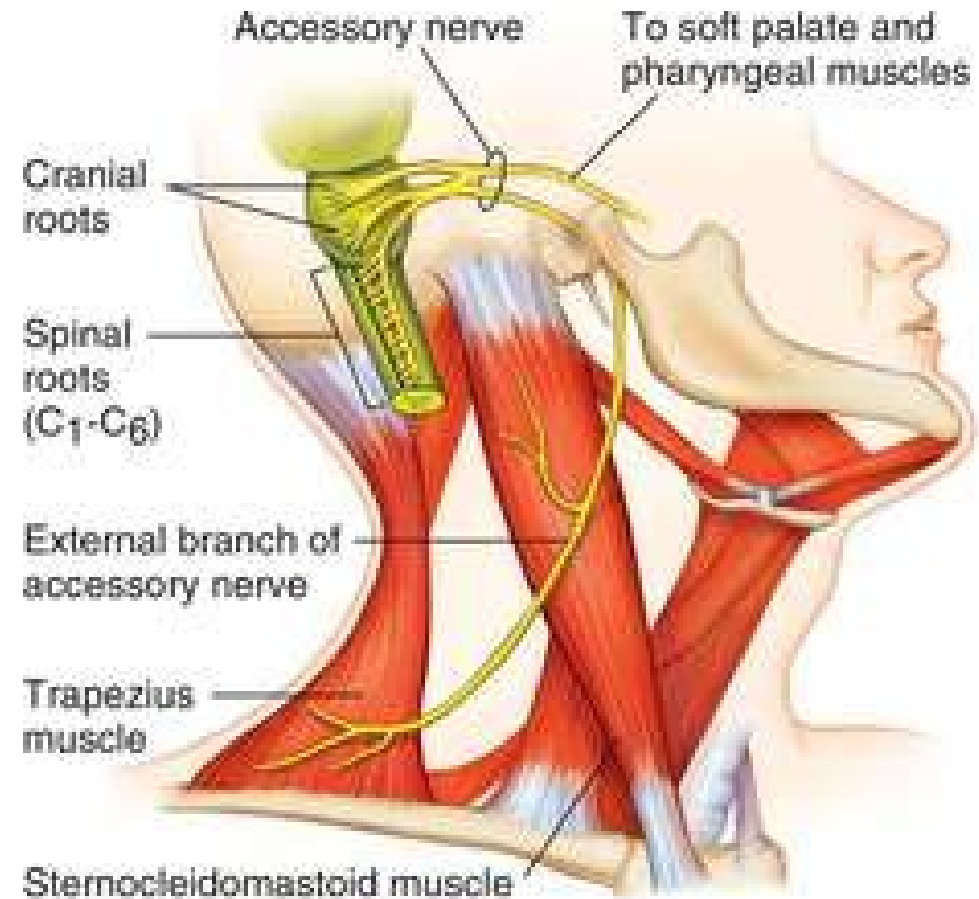


https://www.researchgate.net/figure/Lateral-upward-rotation-of-scapular-motion-during-90-8-anterior-flexion-of-the_fig1_280999234



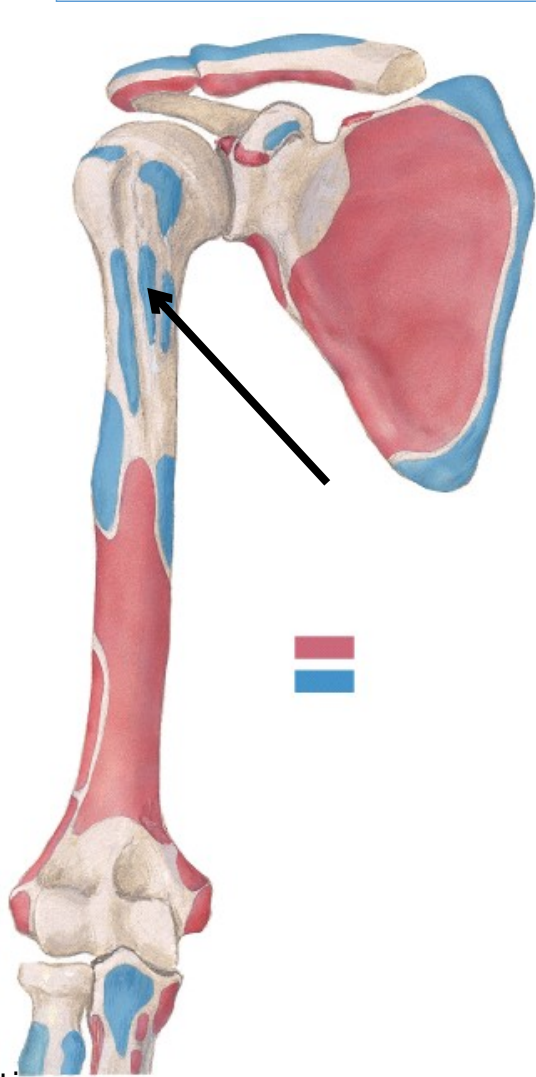
Nerve supply

Spinal accessory (CN 11) nerve.

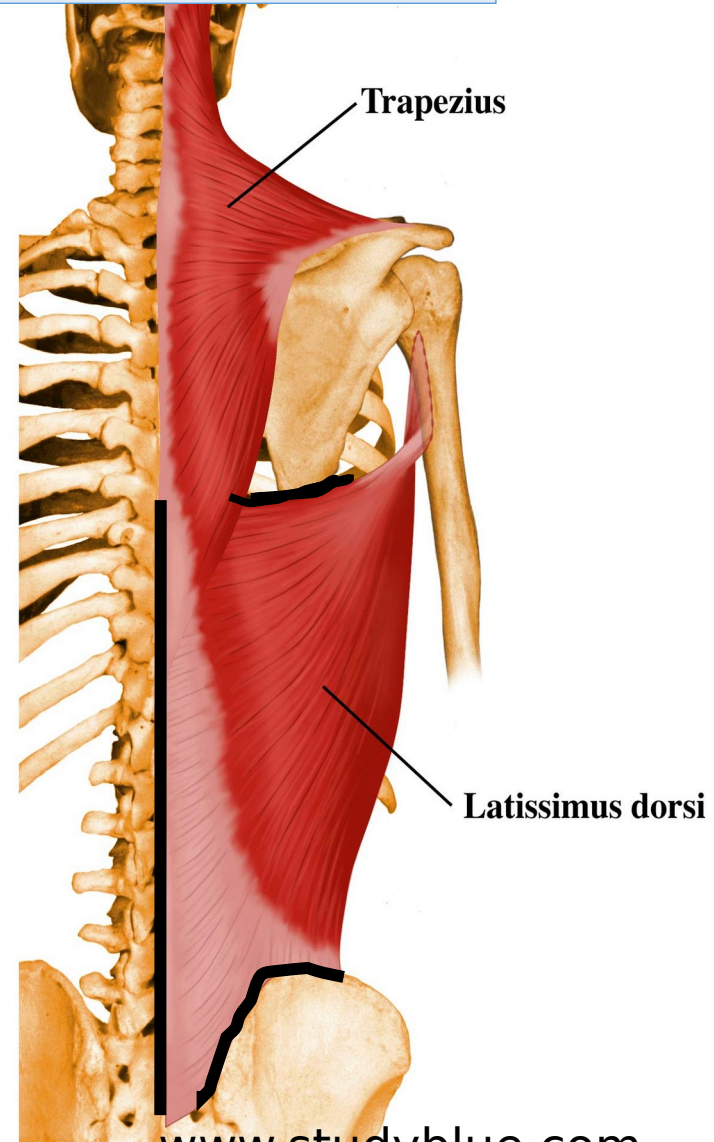


<https://medical-dictionary.thefreedictionary.com/accessory+nerve>

Latissimus dorsi



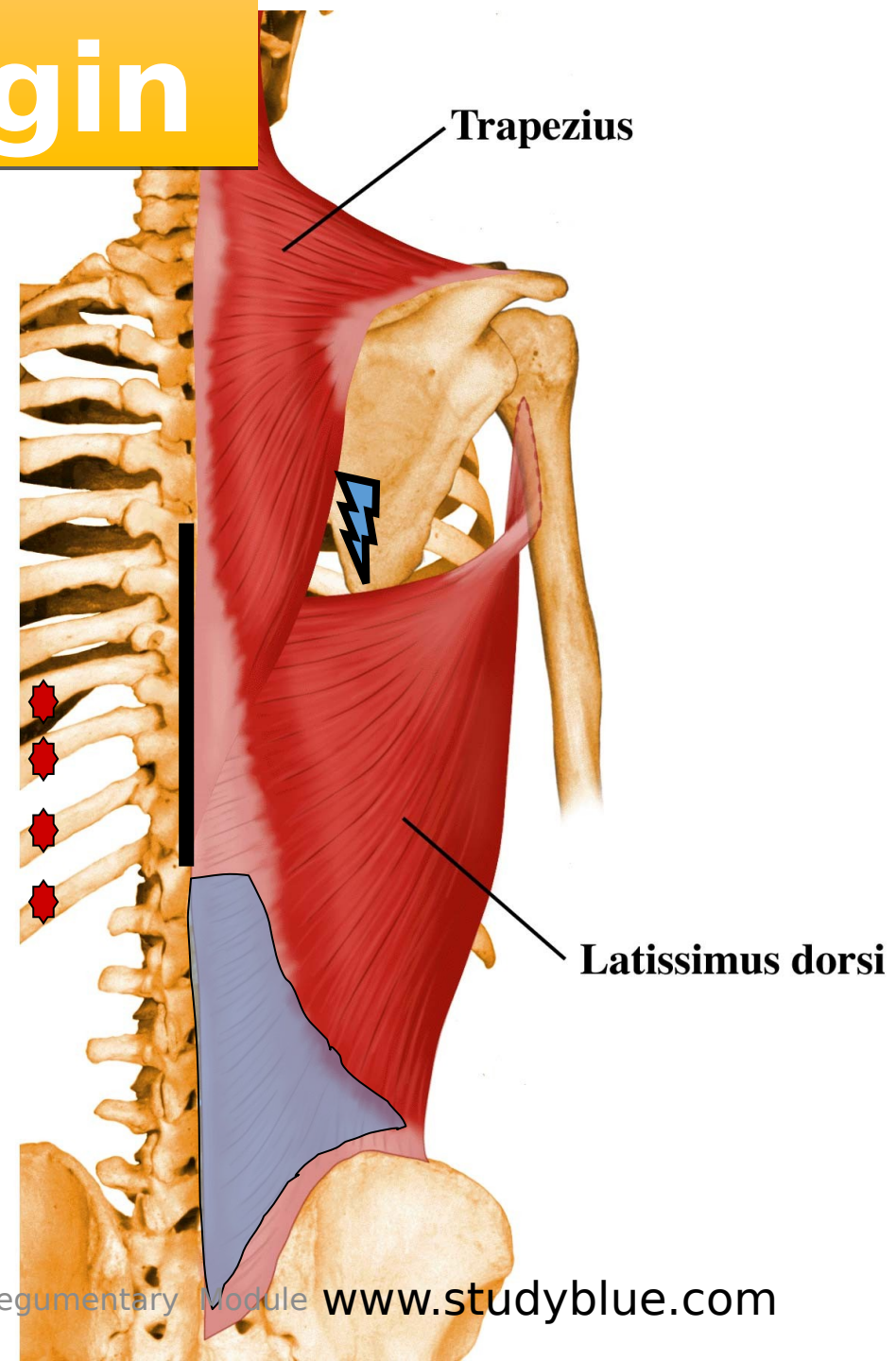
Frank H. Netter 4th. edition



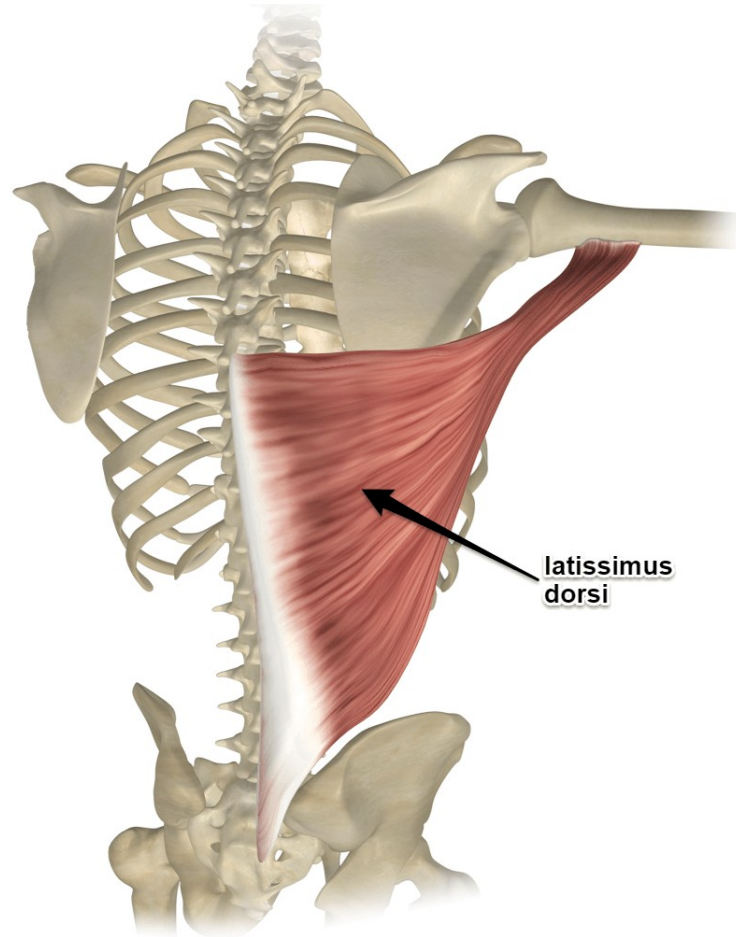
www.studyblue.com

Origin

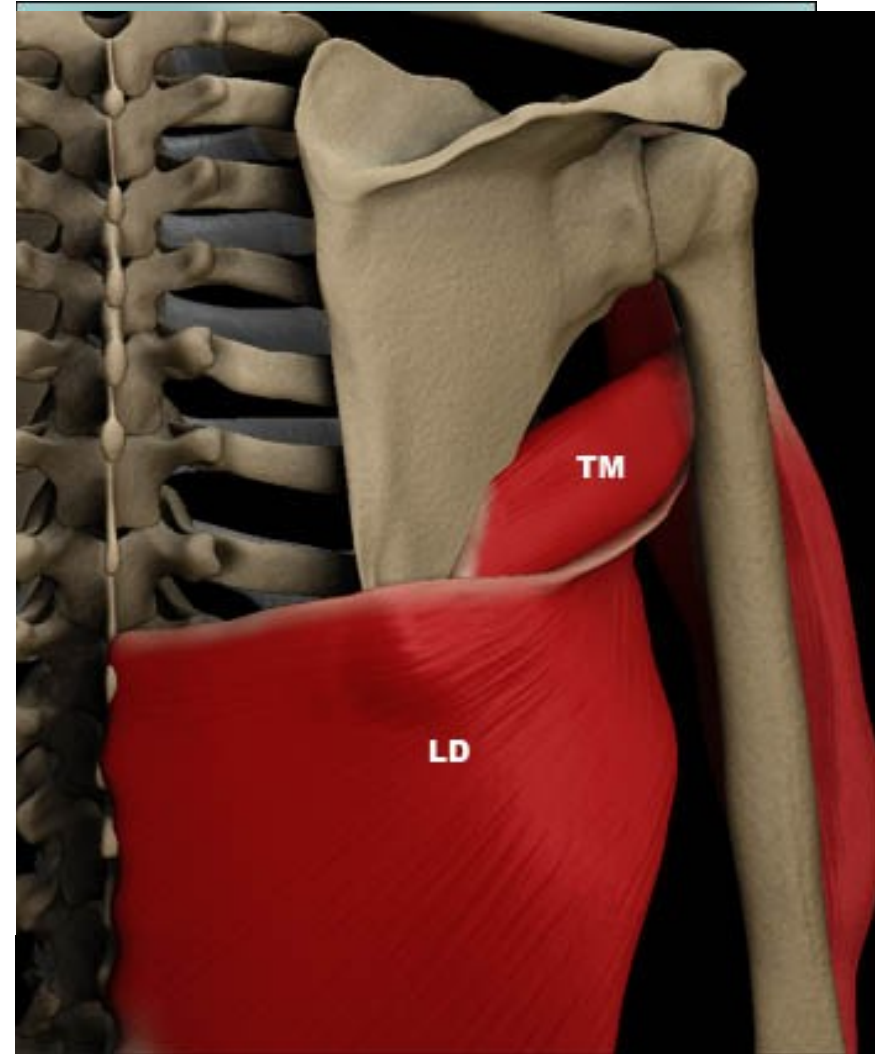
- ❖ post. 1/3 of outer lip of iliac crest of hip bone.
- ❖ lumbar fascia
- ❖ Lower 6 thoracic spines
- ❖ lower 3-4 ribs.
- ❖ back of inferior angle of scapula.



- To floor of bicipital groove of humerus.



<https://www.yoganatomy.com/latissimus-dorsi-muscle/>



Action of latissimus dorsi

Latissimus dorsi help one to scratch his back . Analyse this movement.

- **Adduction**
- **Extension**
- **Medial rotation**

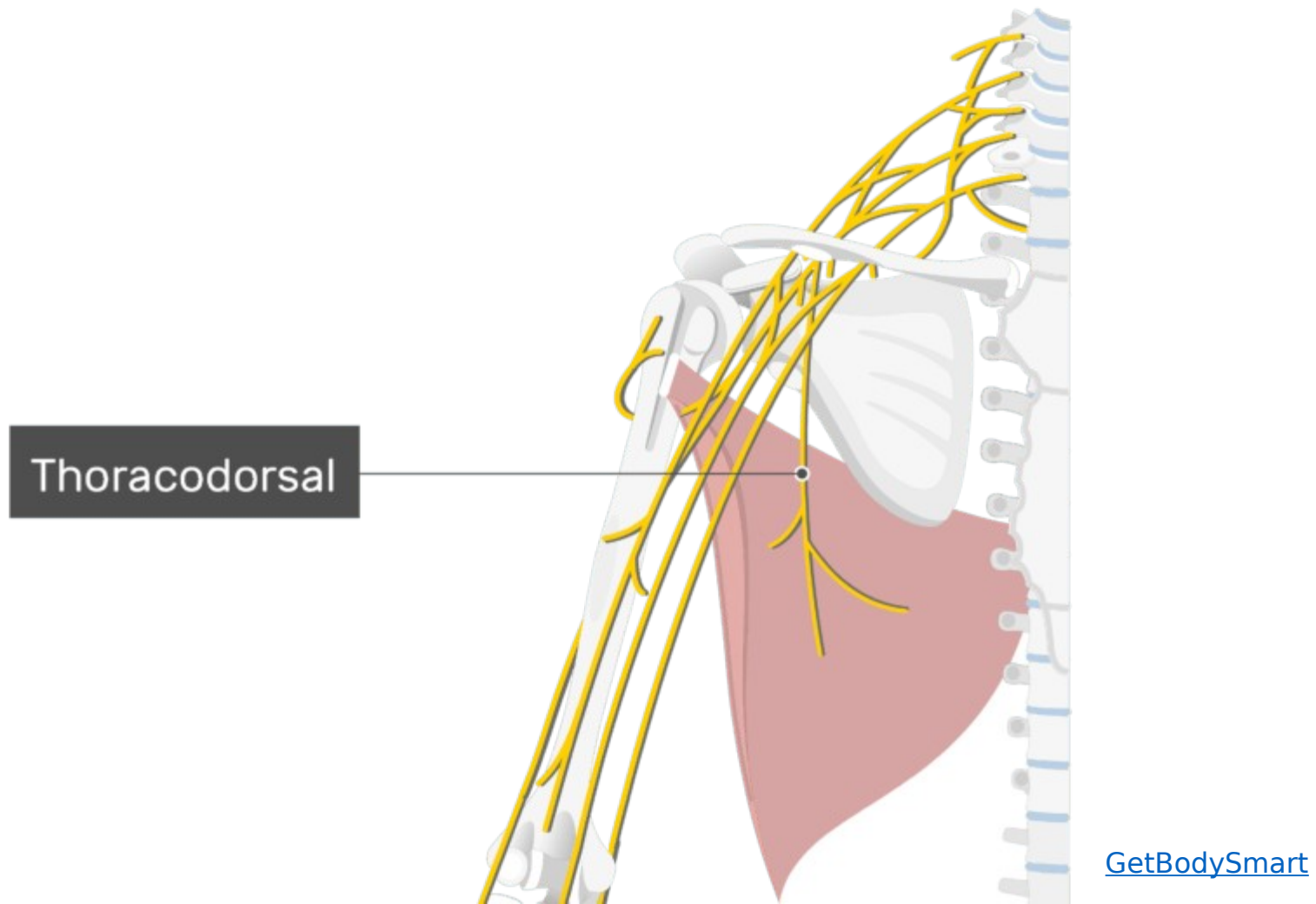


Action of latissimus dorsi

Climbing or elevation of the trunk

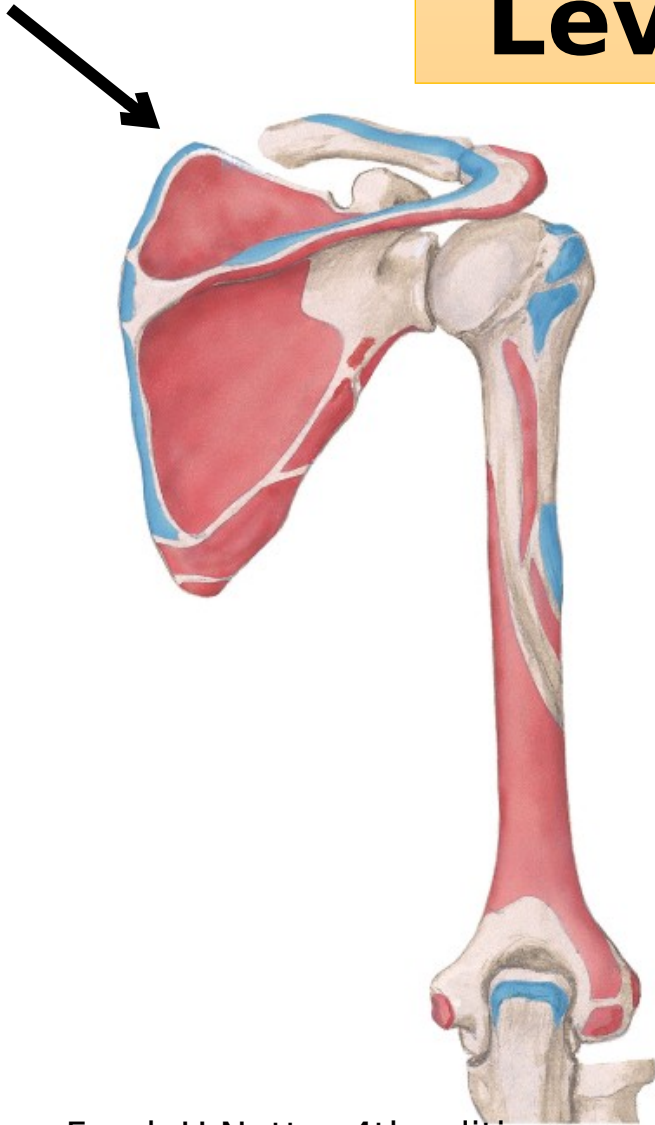


© X-2 012224

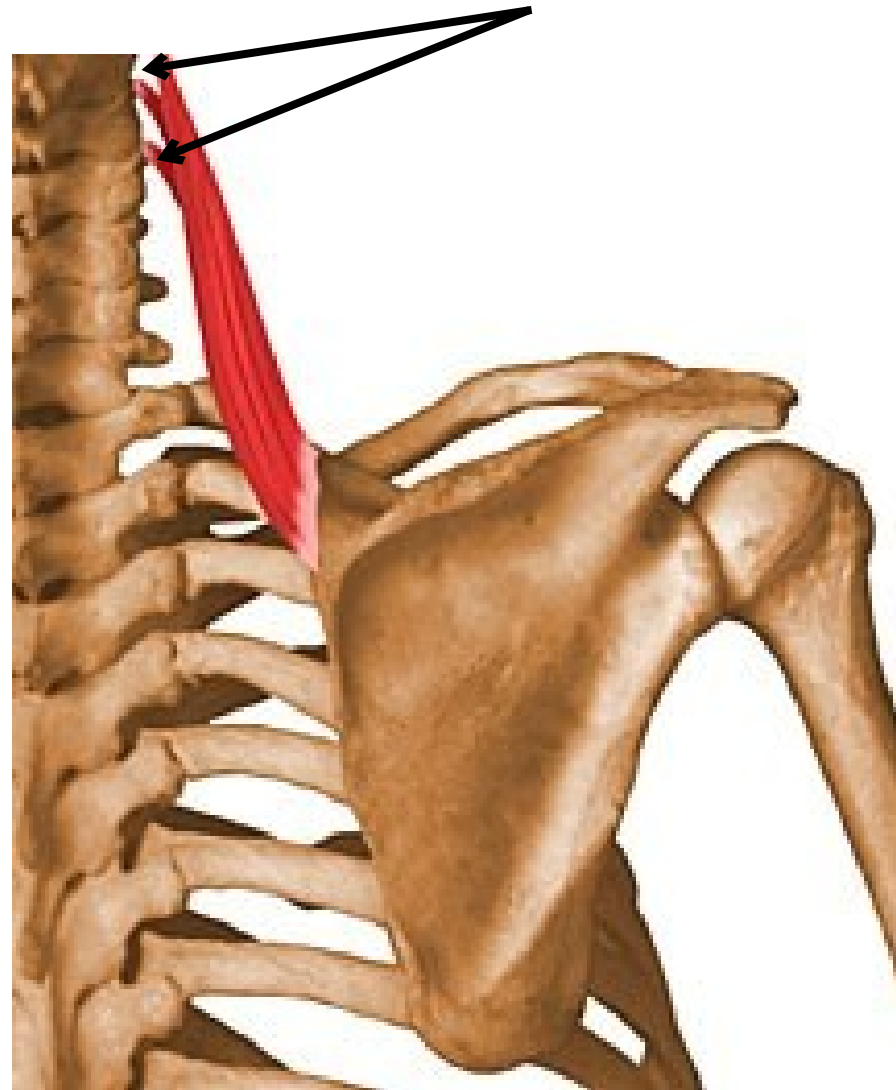


**Nerve supply :
Nerve to latissimus dorsi**

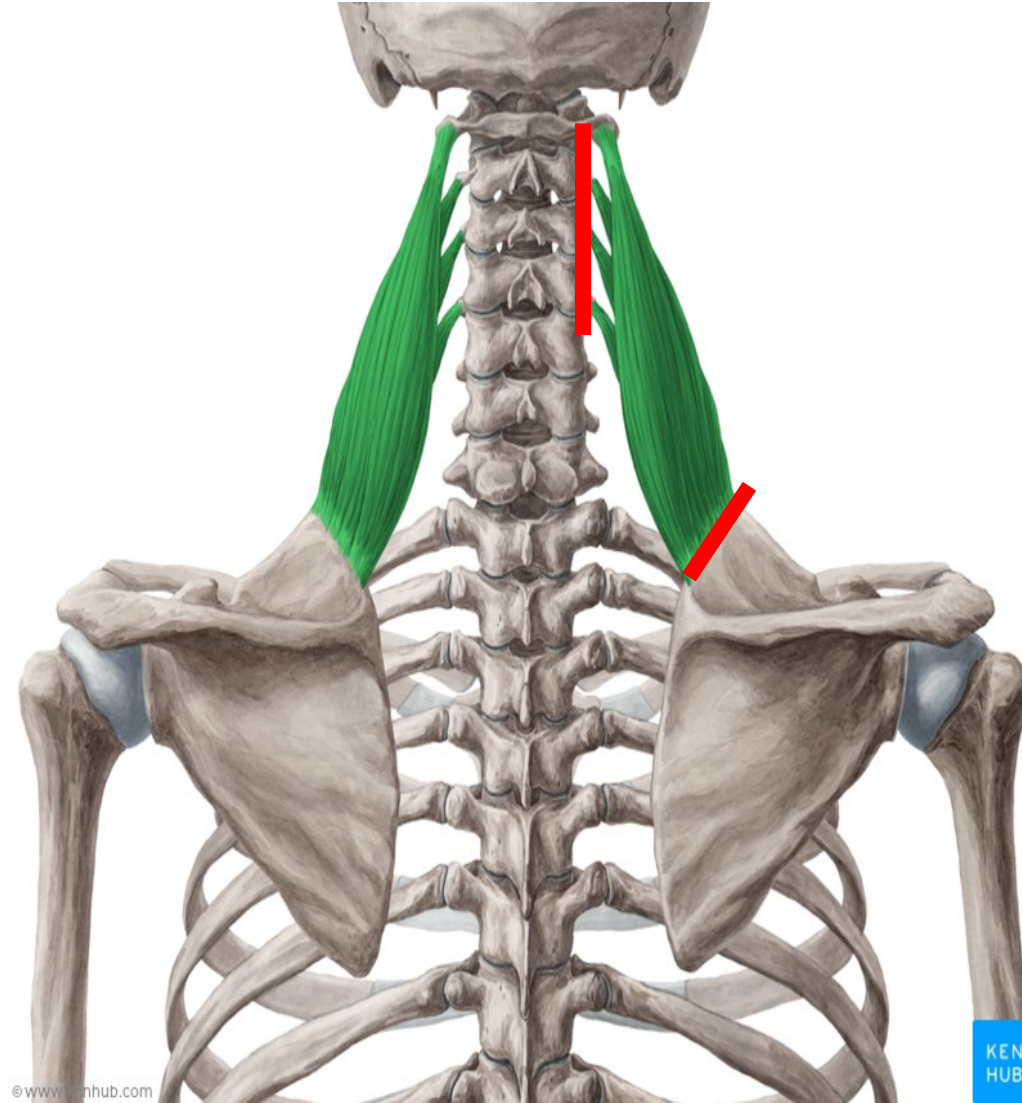
Levator scapulae



Frank H. Netter 4th. edition



- **Origin:**
Transverse processes of C1-4.
- **Insertion:**
Medial border of scapula bet. Sup. Angle & spine.

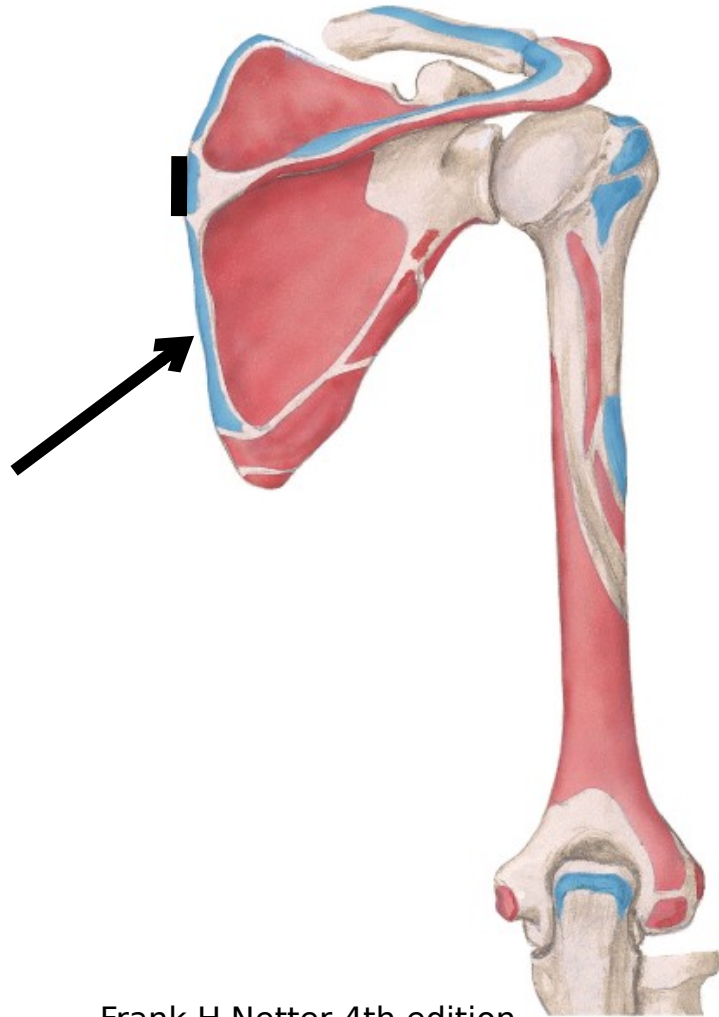


ACTION OF LEVATOR SCAPULA

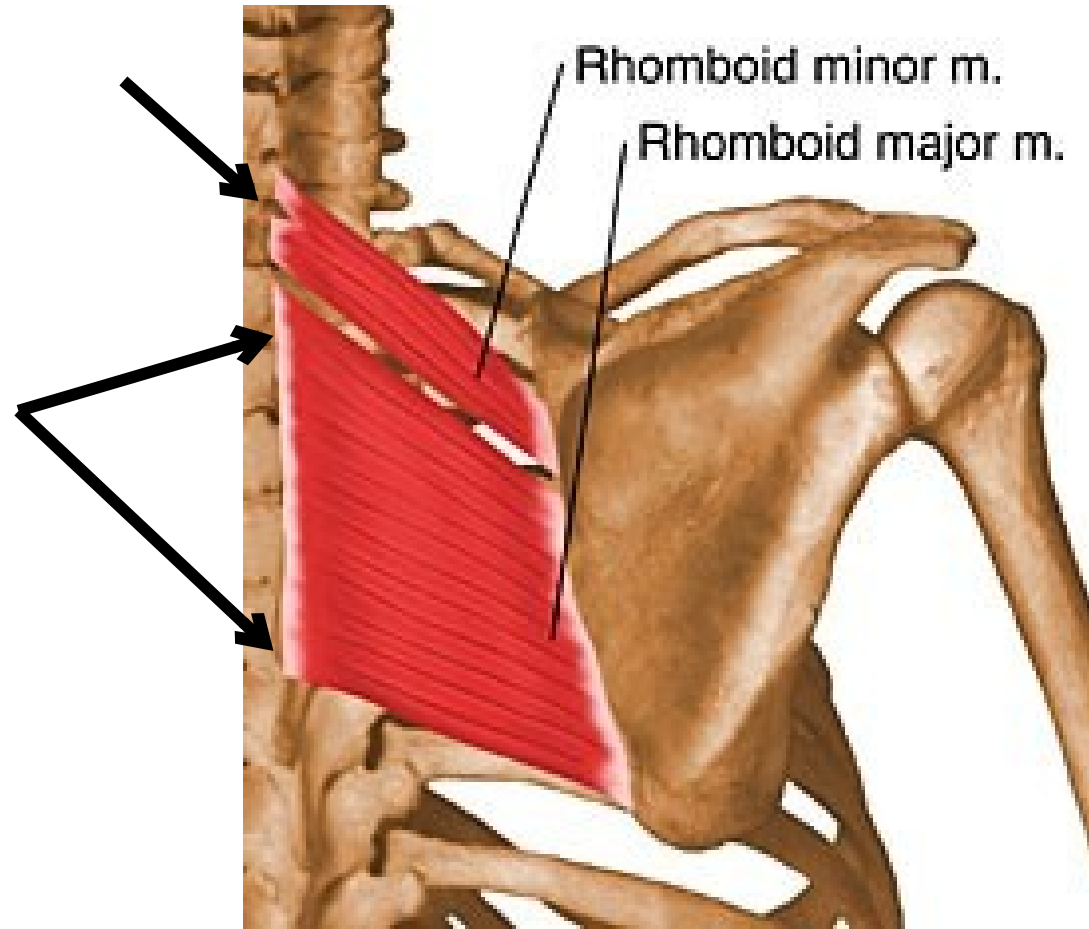


Rhomboideus minor

Rhomboideus major



Frank H. Netter 4th. edition



www.studyblue.com

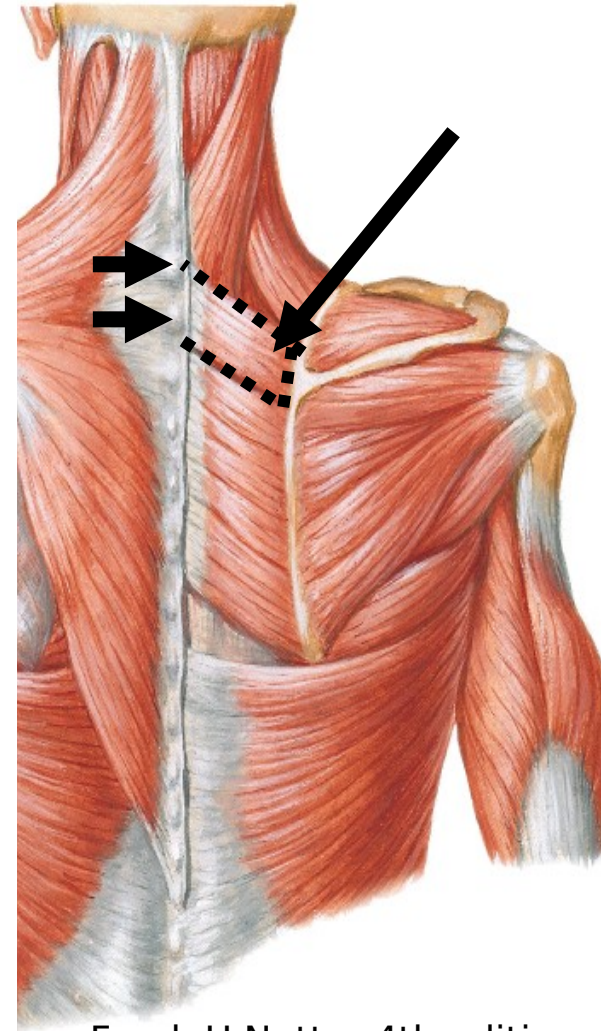
Rhomboid Minor

- **Origin:**

**Spines of C7 & T1
& lower part of
ligamentum
nuchae.**

- **Insertion:**

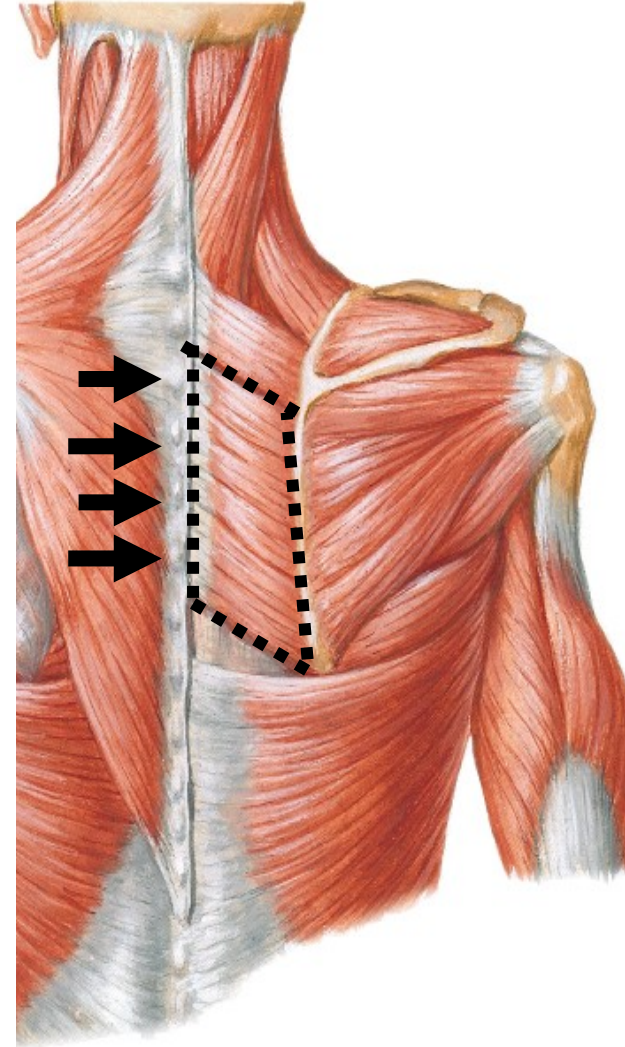
**Medial border of
scapula
opposite spine**



Frank H. Netter 4th. edition

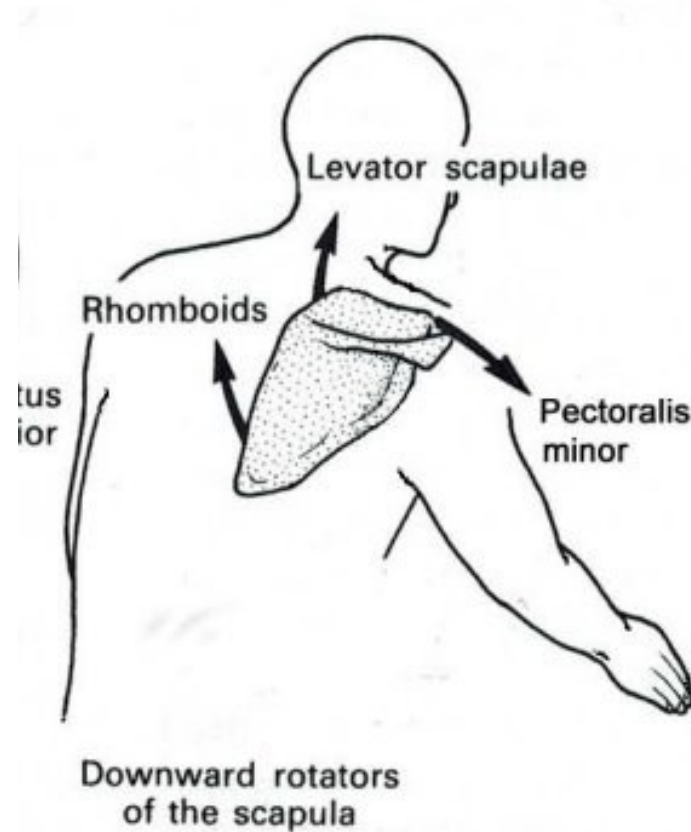
Rhomboid Major

- **Origin:**
**Spines of
T2,3,4,5 &
their
supraspinous
lig.**
- **Insertion:**
**Medial border of
scapula below
root of spine.**

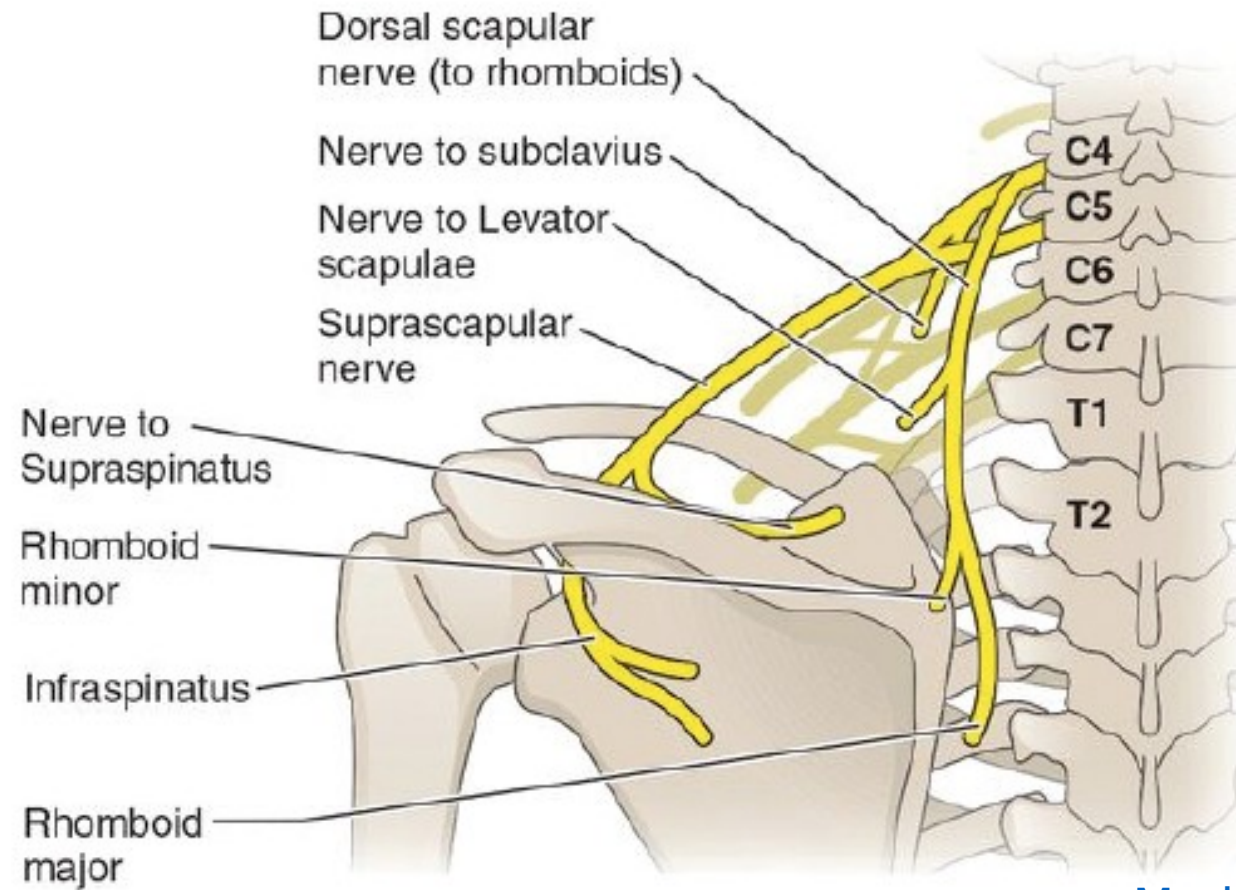


Frank H. Netter 4th. edition

Action of Rhomboids



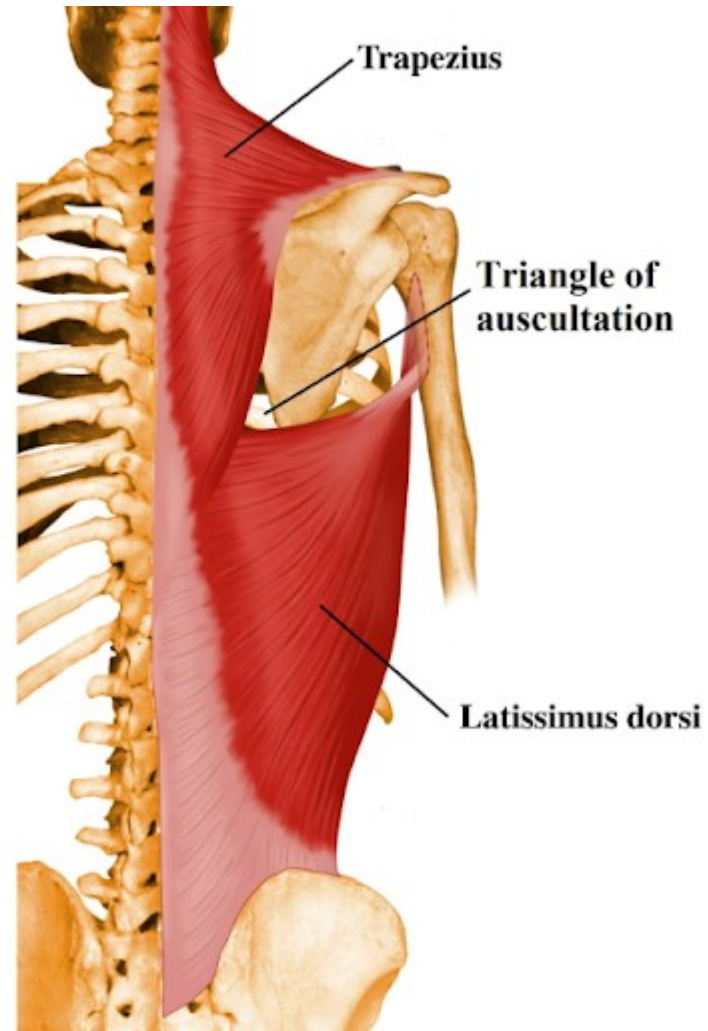
https://www.researchgate.net/figure/Lateral-upward-rotation-of-scapular-motion-during-90-8-anterior-flexion-of-the_fig1_280999234



Medicaljournals.se

Dorsal scapular nerve

Triangle of auscultation



www.studyblue.com

Scapular Region

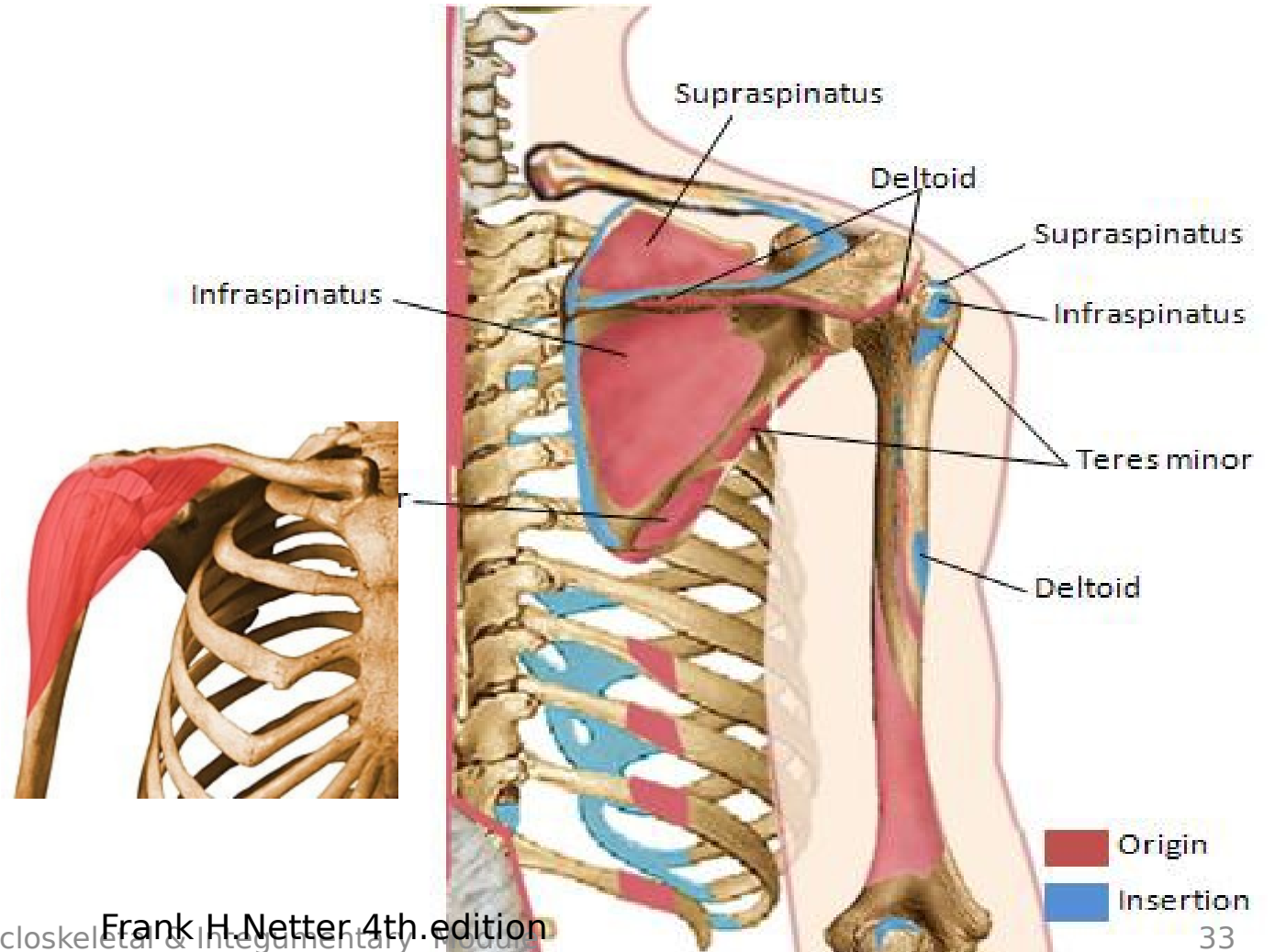
Deltoid Muscle

Origin:

1. Anterior border of lateral 1/3 of clavicle.

2. Lateral border of acromion process of scapula.

3. Lower lip of crest of scapular spine.



Deltoid Muscle

- **Insertion:**

Deltoid tuberosity of humerus.

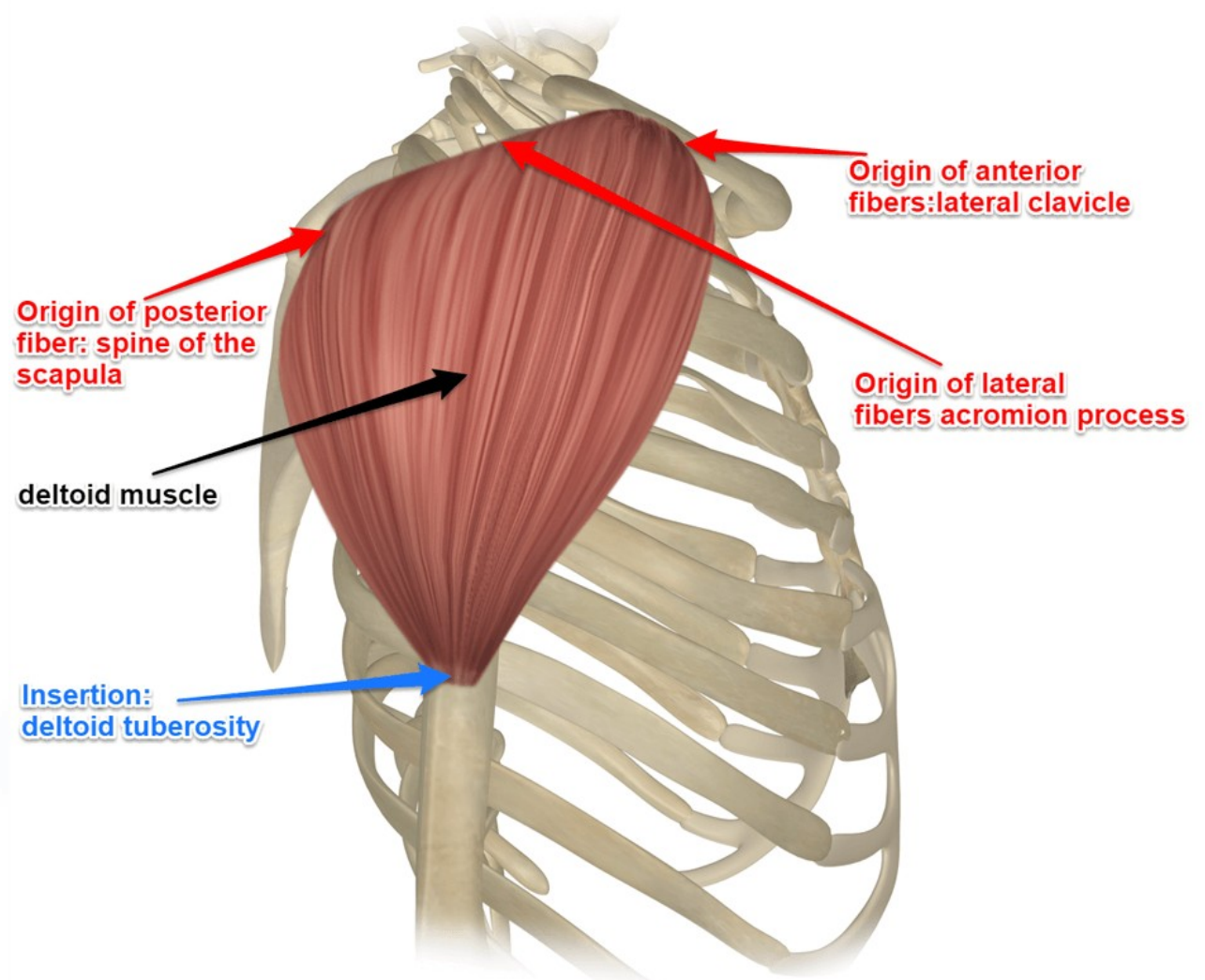
- **Nerve Supply:**

Axillary nerve

- **Action:**

1. Anterior fibers: flexion & medial rotation of arm.

2. Middle fibers: abduction of



[Yoganatomy](http://Yoganatomy.com)

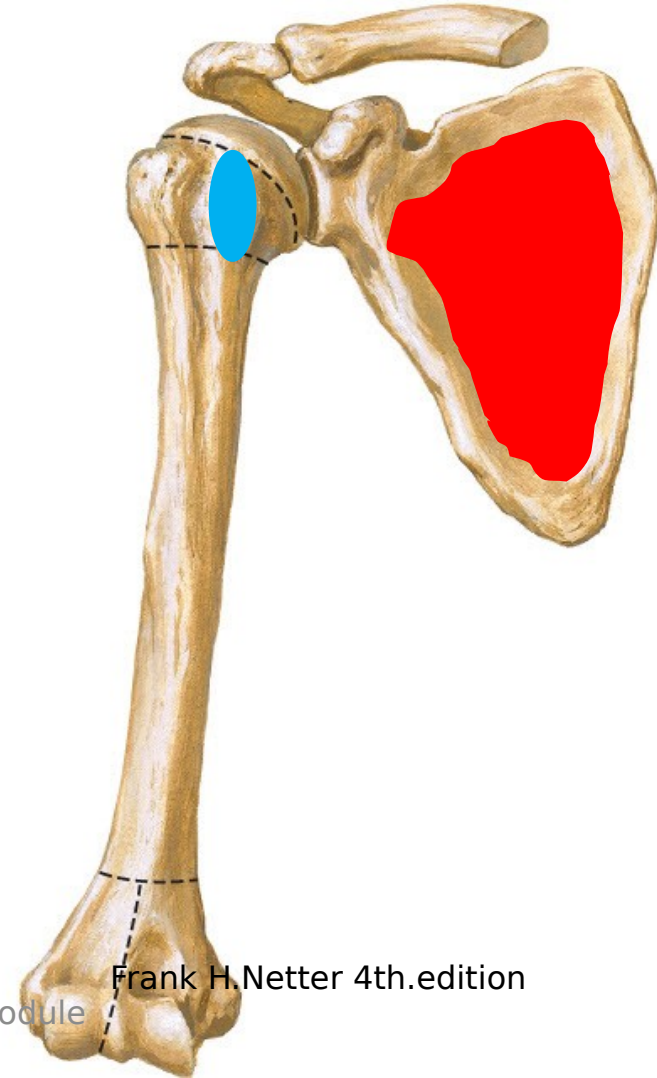
Subscapularis Muscle

- **Origin:**

Medial 2/3 of subscapular fossa.

Insertion:

Lesser tuberosity of humerus.



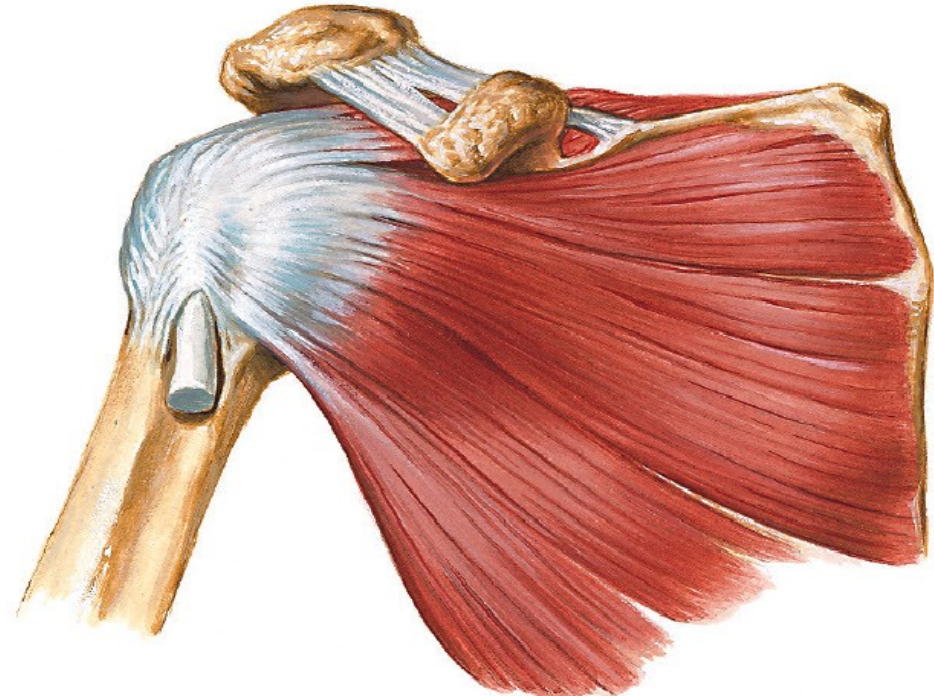
Subscapularis Muscle

- ***Nerve Supply:***

Upper & Lower Subscapular nerves.

- ***Action:***

Adduction and medial rotation of



Frank H. Netter 4th. edition

Supraspinatus Muscle

- **Origin:**

Medial 2/3 of supraspinous fossa.

- **Insertion:**

Upper impression of greater tuberosity of humerus.



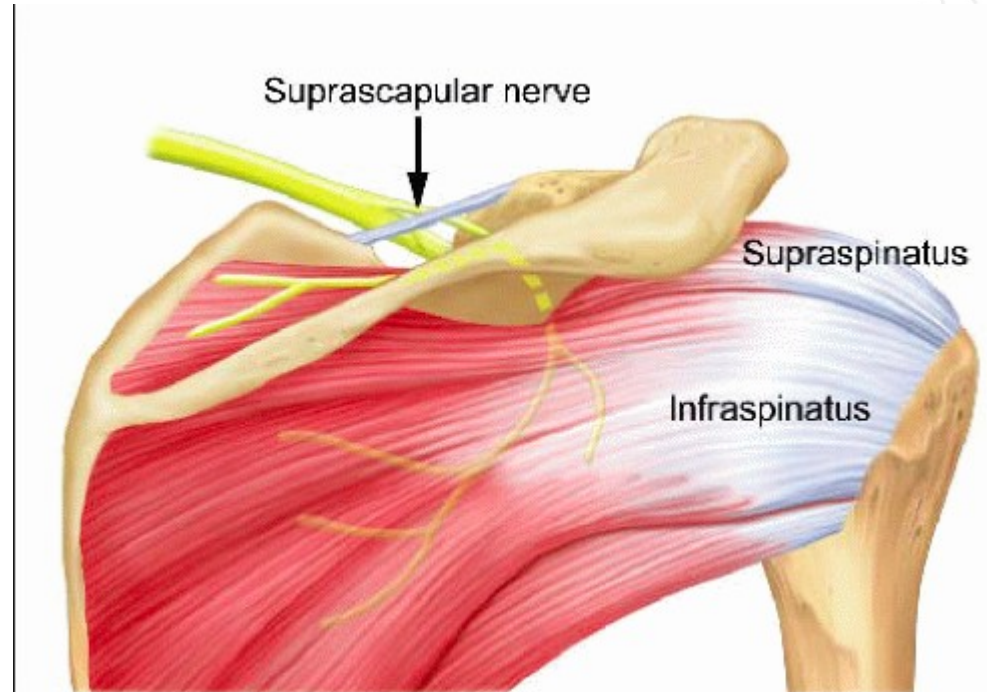
Supraspinatus Musc

- **Nerve Supply:**
Suprascapular nerve

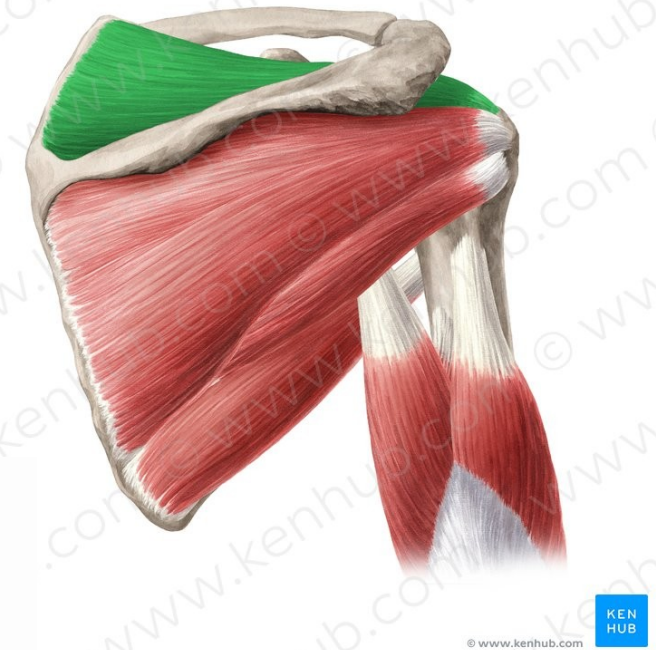
- **Action:**

- **Initiation of abduction of arm in its early steps (first 0 - 15 Degrees).**

New Five Year Program



[Rayner & Smale](#)



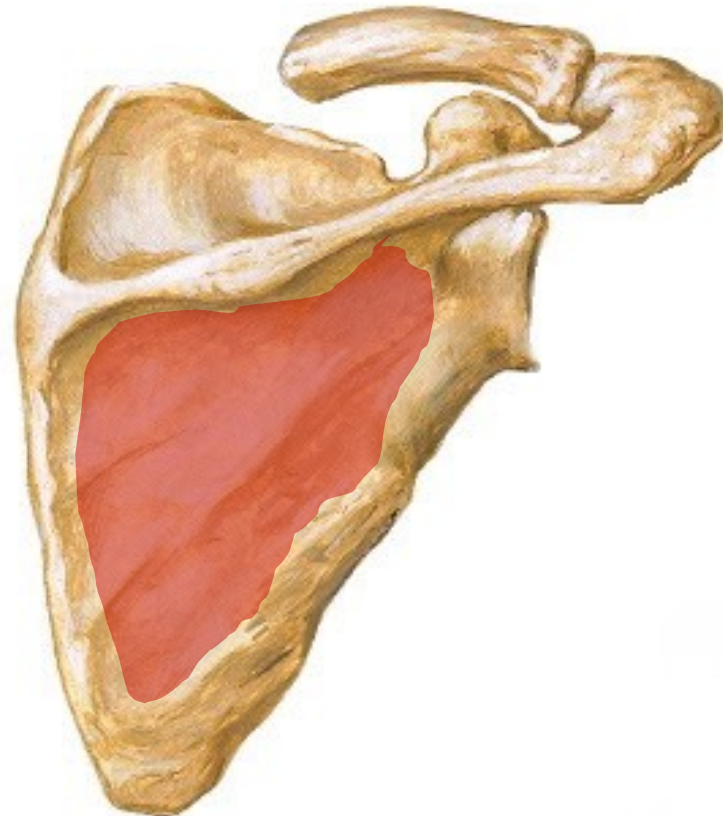
Infraspinatus Muscle

- **Origin:**

**Medial 2/3 of
infraspinous
fossa.**

Insertion:

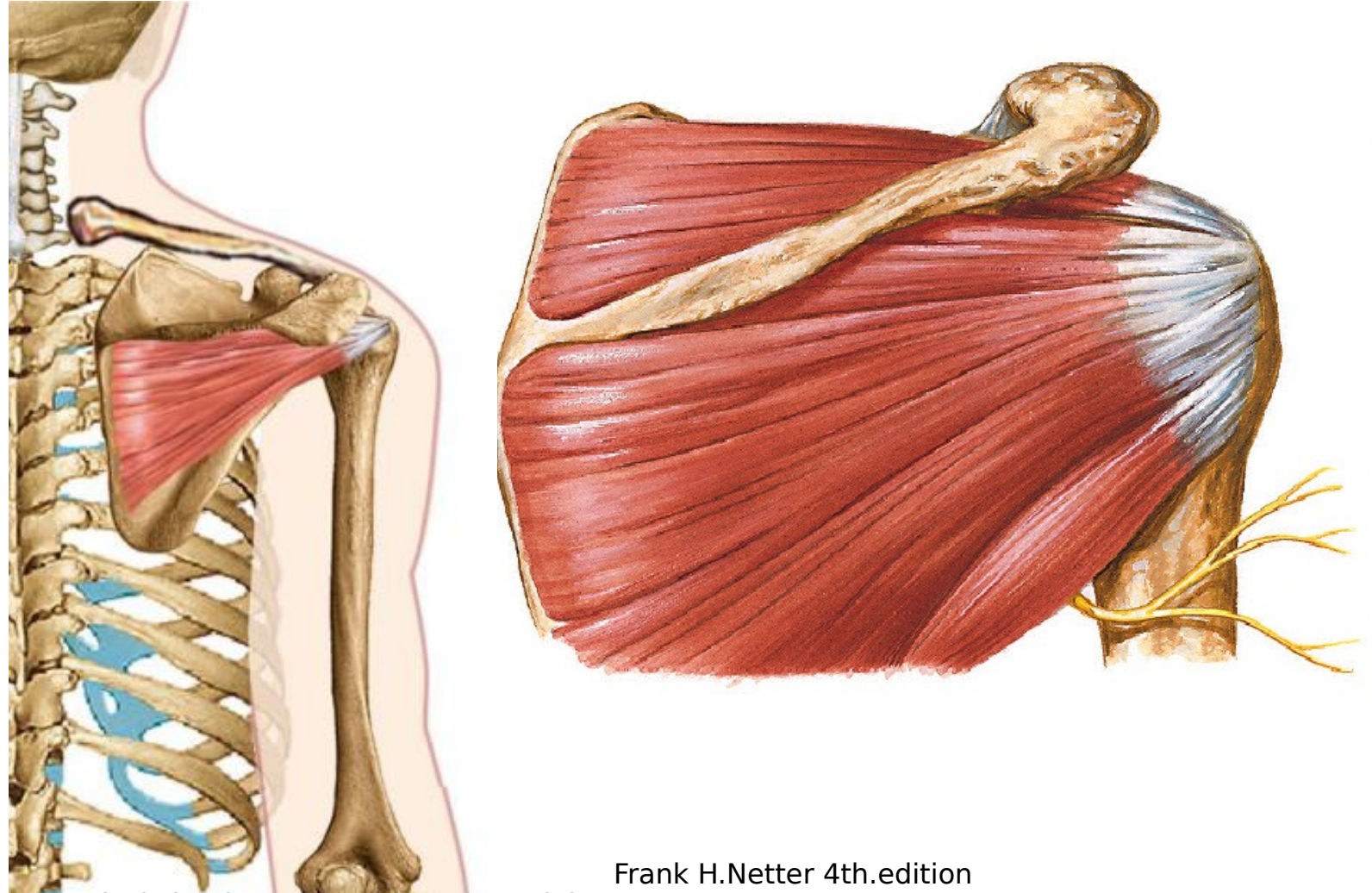
**Middle impression
of greater
tuberosity of
humerus.**



Infraspinatus Muscle

- **Nerve Supply:**
Suprascapular nerve

- **Action:**
Adduction and lateral rotation of arm.



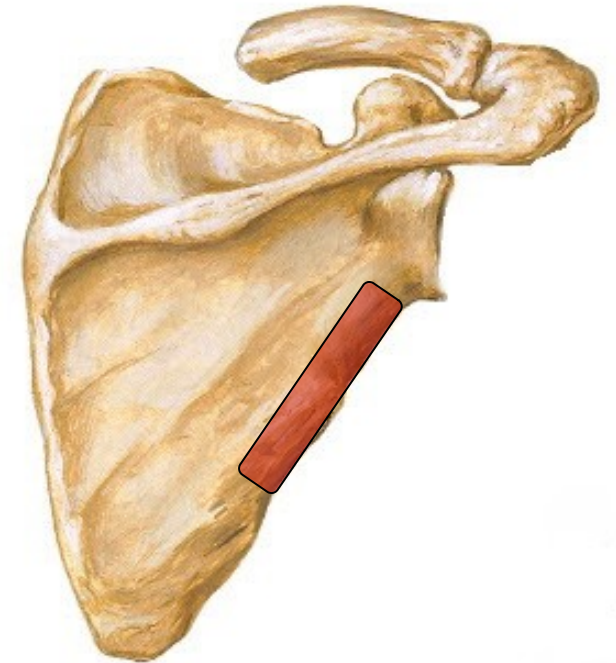
Teres Minor Muscle

■ **Origin:**

Upper 2/3 of dorsal aspect of lateral border of scapula.

Insertion:

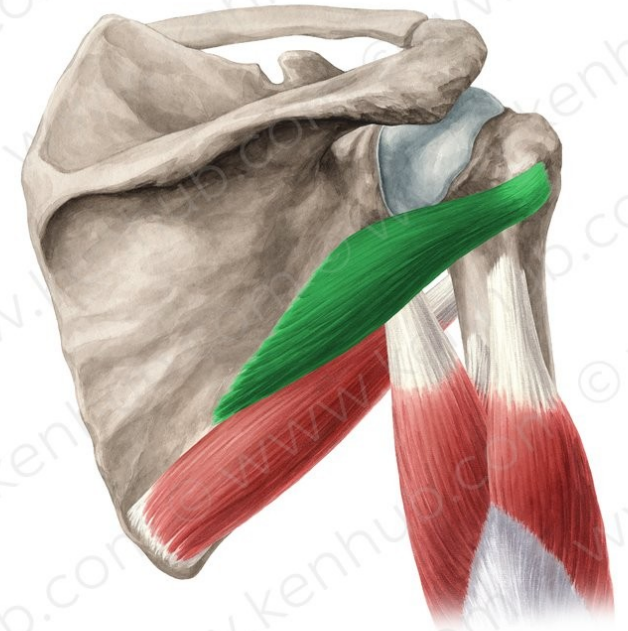
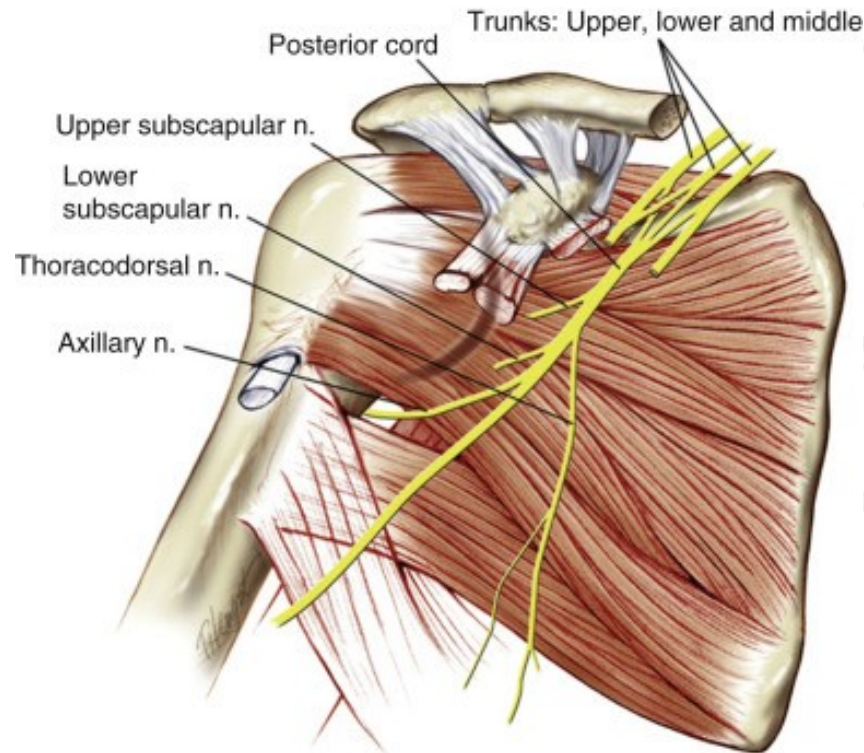
Lower impression of greater tuberosity of



Frank H. Netter 4th. edition

Teres Minor Musc'

- **Nerve Supply:**
Axillary nerve
- **Action:**
Adduction and lateral rotation of the arm.



<https://www.sciencedirect.com/topics/neuroscience/lower-subscapular-nerve>

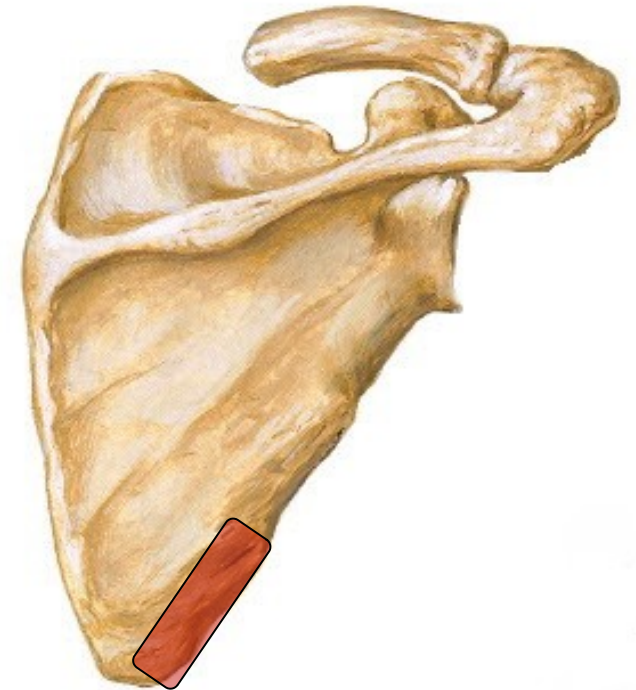
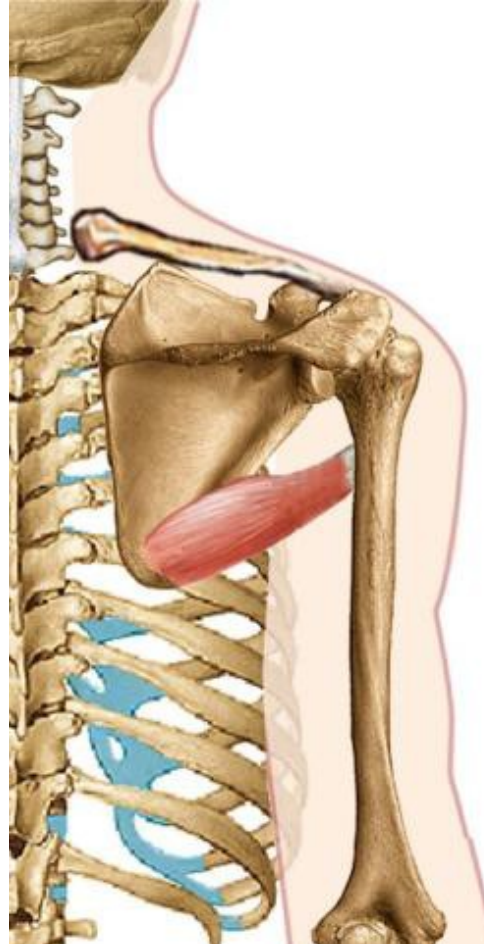
Terse Major Muscle

■ **Origin:**

Lower 1/3 of dorsal aspect of lateral border of scapula.

Insertion:

Medial lip of bicipital groove of humerus.

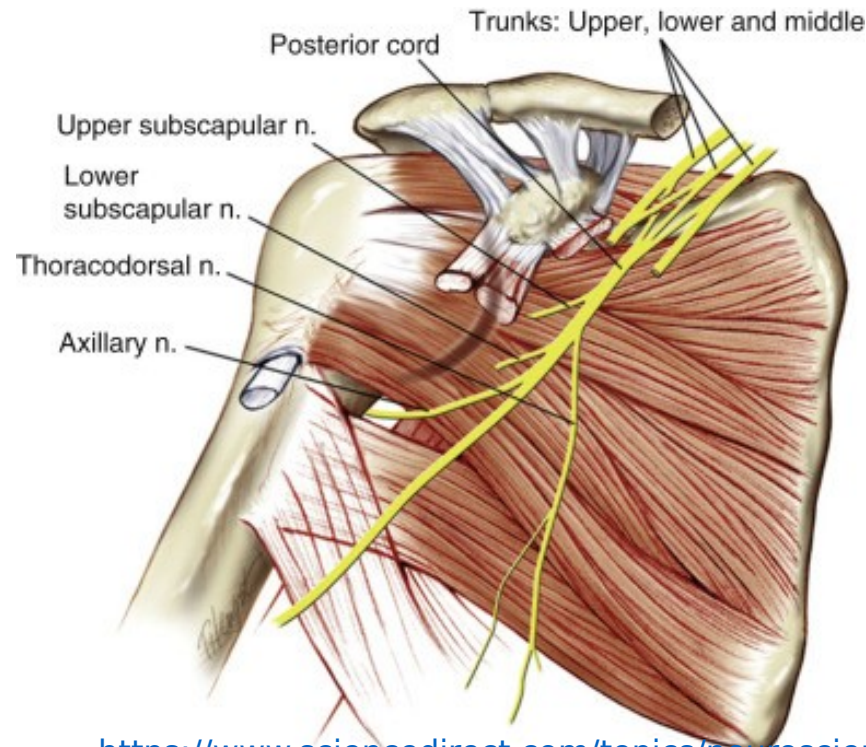


Frank H. Netter 4th. edition

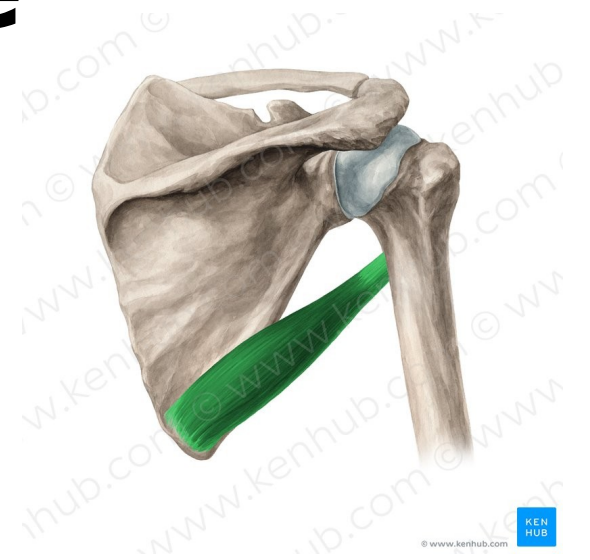
Teres Major Muscle

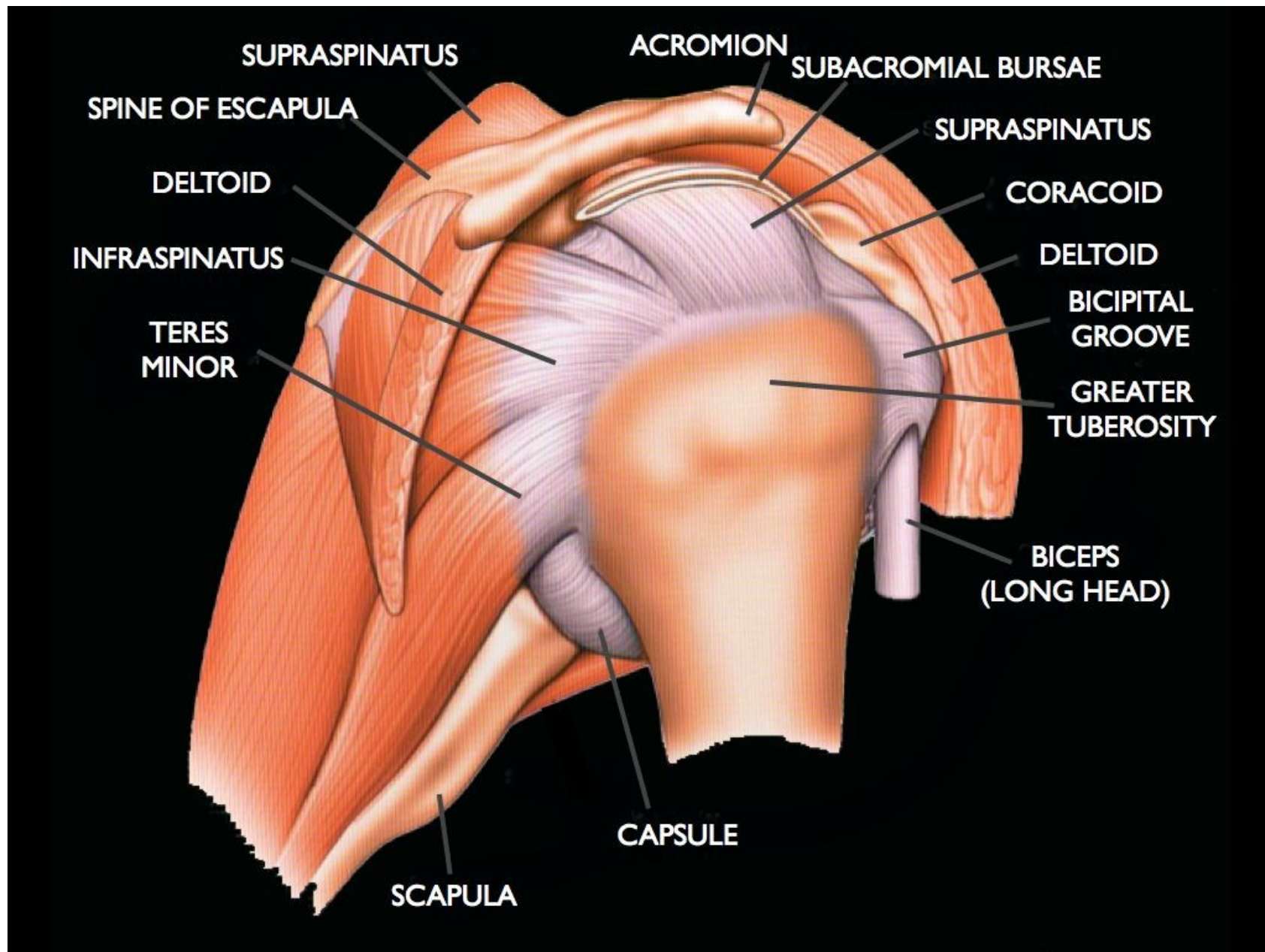
- **Nerve Supply:**
Lower Subscapular nerve

- **Action:**
**Adduction,
extension and
medial
rotation of arm.**

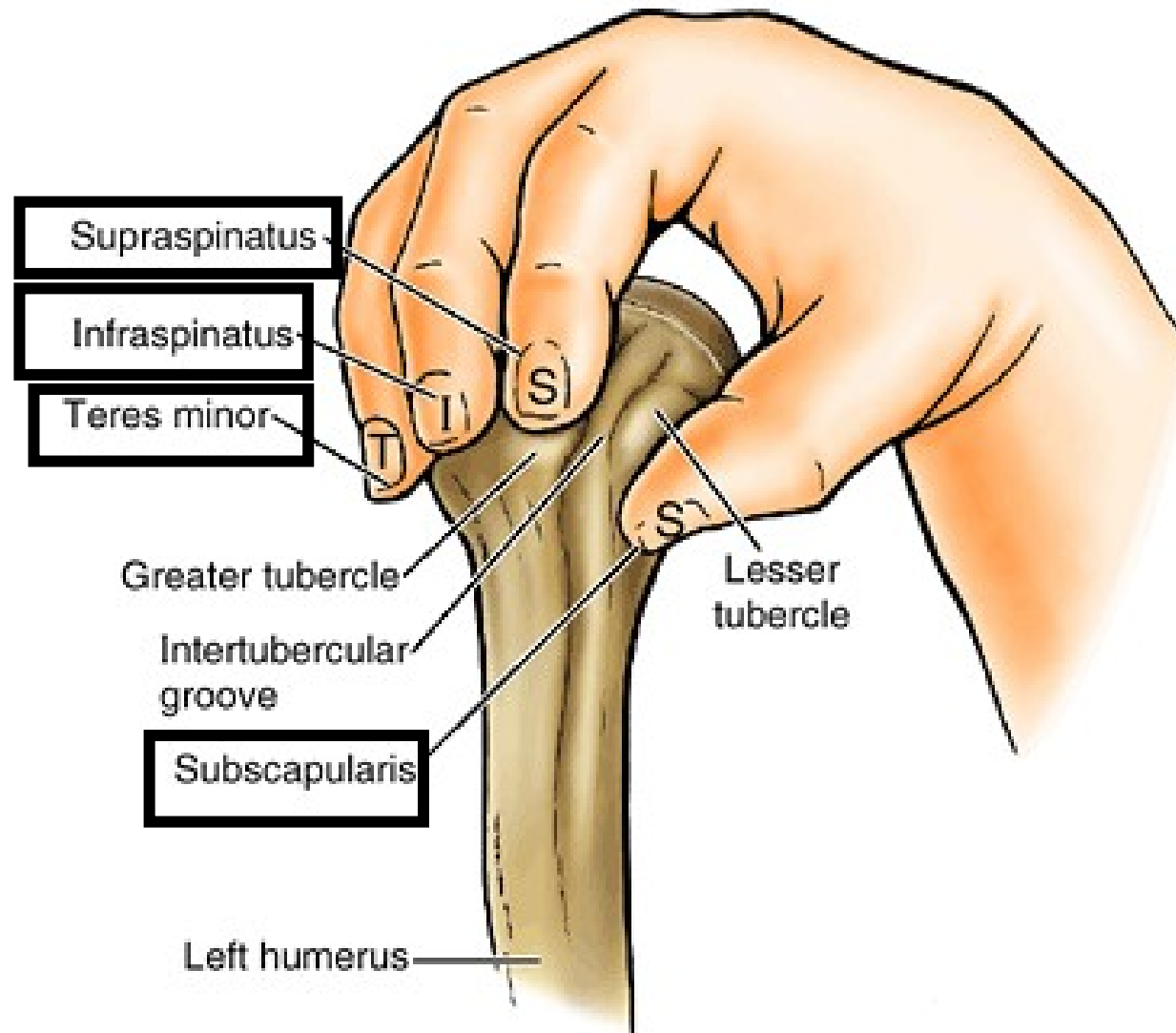


<https://www.sciencedirect.com/topics/neuroscience/lower-subscapular-nerve>



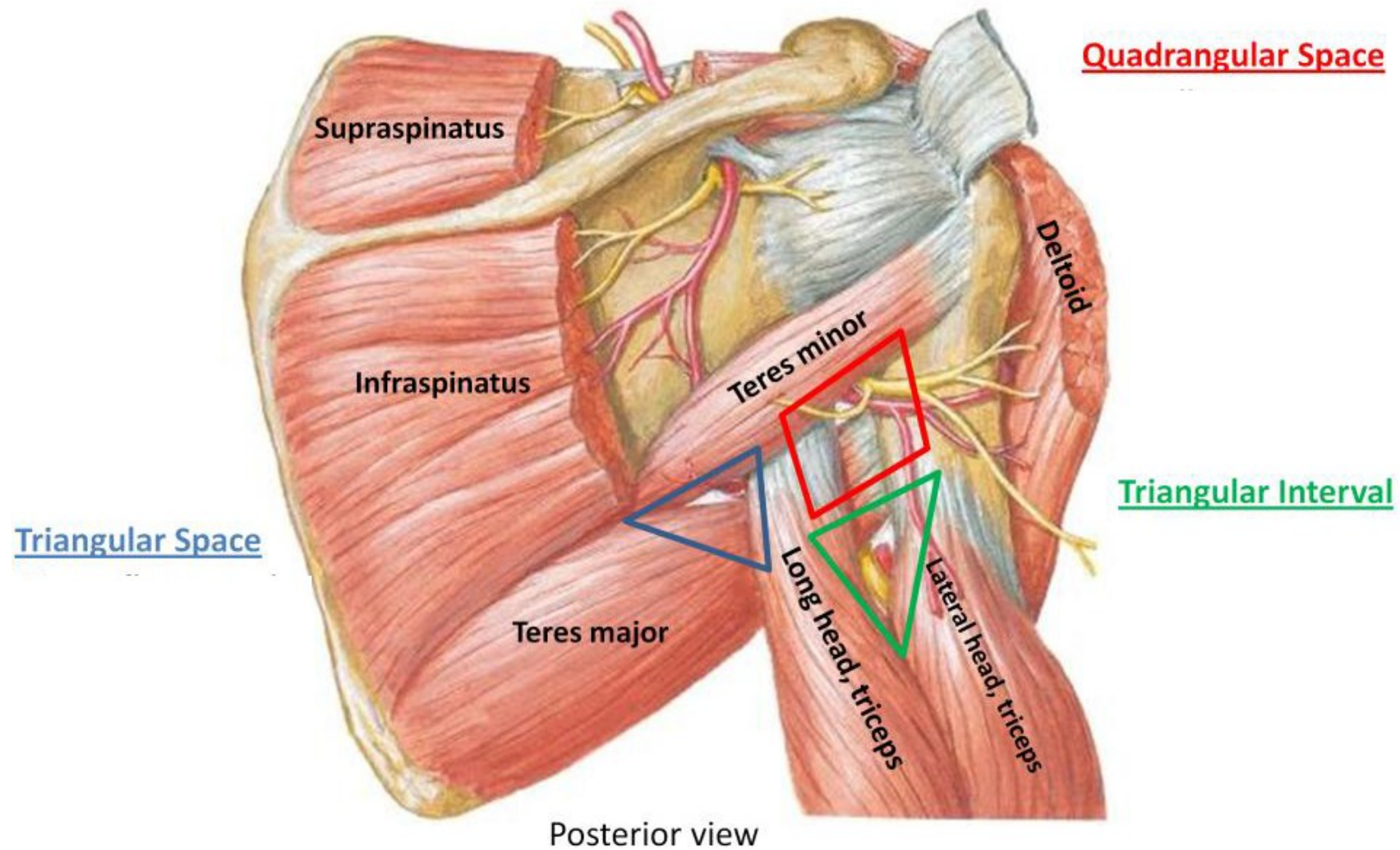


Insertion of rotator cuff muscles (SITS) into the two humeral tuberosities



The Rotator cuff: is a fibrous sheath which is formed by the flattened tendons of the 4 muscles that are inserted into the 2 tuberosities of the head of humerus. These tendons blend with the capsule of the shoulder joint to strengthen it. These muscles are:
Subscapularis, Supraspinatus, Infraspinatus and Teres minor.

* The rotator cuff gives strength to the capsule except inferiorly. This explains



Frank H.Netter 4th.edition

Quadrangular space:

1. Axillary nerve
2. Posterior circumflex humeral vessel

Triangular A

Circumflex scapular a

Triangular B

3. Radial nerve
4. Profunda brachii vessel



1. Quadrangularspace

- * Superior: Subscapularis + teres minor.* Inferior: Teres major.
- * Medial: Long head of triceps. Lateral: Surgical neck of humerus.
 - a. Posterior circumflex humeral vessels.
 - b. Axillary nerve.

2. Uppertriangular space

- * Superior: Teres minor.
 - * Lateral: Long head of triceps.
 - * Inferior: Teres major.
- Circumflex scapular artery.

3. Lowertriangular space

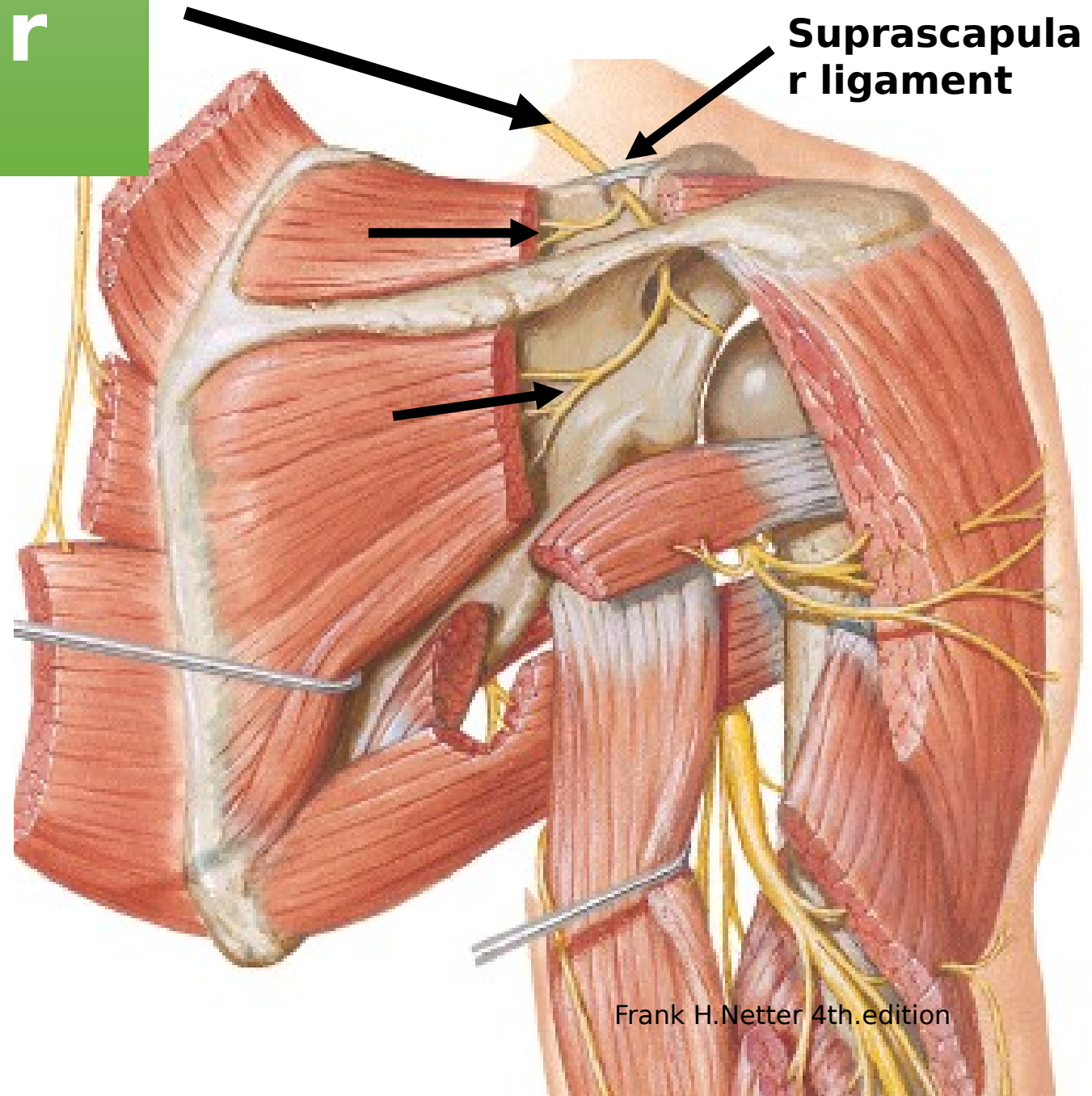
- * Superior: Teres major.
- * Medial: Long head of triceps.
- * Lateral: Shaft of humerus.
 - a. Radial nerve.
 - b. Profunda brachii vessels.

Suprascapular nerve

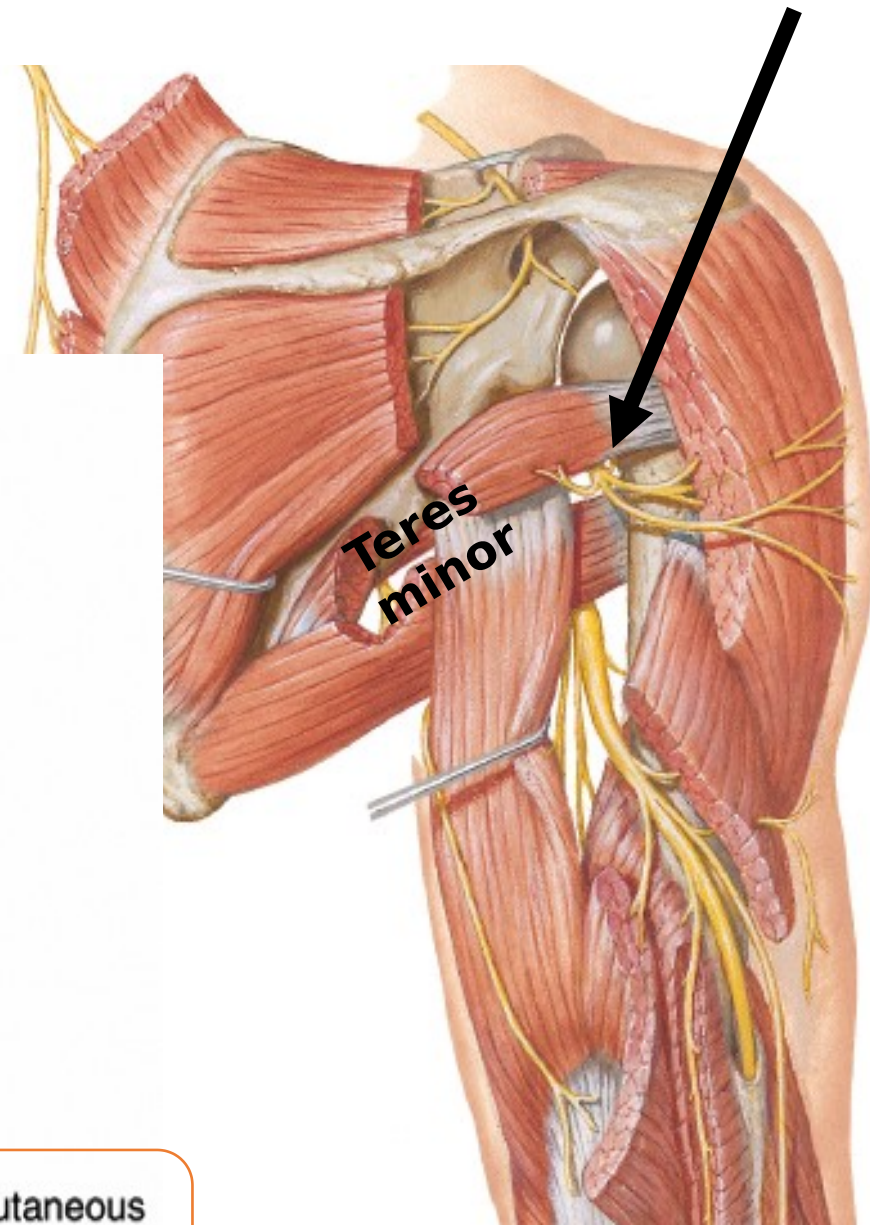
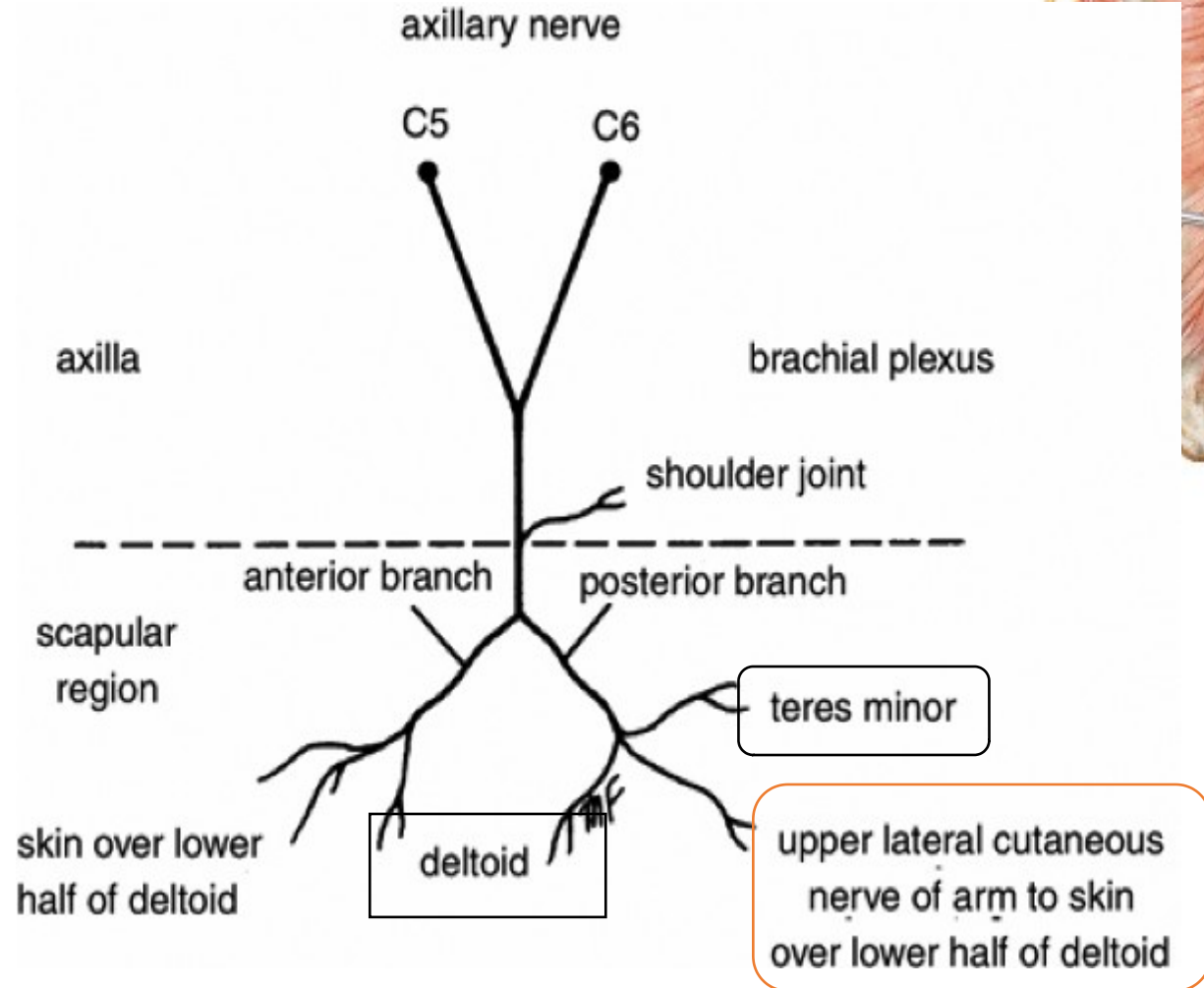
Branch of the upper trunk of brachial plexus (C5,6)

- **Supplies :**

1. Suprascapular



AXILLARY NERVE



Frank H. Netter 4th. edition



Initiation of abduction will be produced by

a.Deltoid

b.Supraspinatus

c.Infraspinatus

d.Teres minor

e.Teres major

SUGGESTED TEXTBOOKS



Frank H.Netter 4th.edition

Gray' s Anatomy for students.www.studentconsult.com